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The California Quarterly of Secondary Education was established in October, 1925. An extension of its service was made possible in 1927 through a gift by Mr. Carl F. Schader of Santa Monica, California. In his letter of grant, Mr. Schader said:

"Every possible encouragement should be extended to teachers to use the scientific method in their study of problems in education and in the application of such study to the construction of a curriculum that will square itself with the constantly changing conditions of a modern, scientific age, embracing the physical, intellectual and spiritual nature of man. In this field I see great opportunity for laymen to co-operate with our educational leaders for the improvement of the public secondary schools of the State and Nation."

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THE CITY SURVEY*

JOHN A. SEXSON
Superintendent of Schools, Pasadena

The School Survey—A Phase of the Larger Survey Movement

A SURVEY is a method of inquiry. It has been applied in business, government, industry, social sciences, religion and education. The Russell Sage Foundation lists 2700 surveys under 132 main headings, of which health and education are the subjects most frequently studied. Not only is the survey a method of wide general application to many diverse fields, but it is at the same time one of the oldest and best established of all of the various attempts which man has made to apply intelligence to the solution of the problems confronting him.

Essentially, the survey is man's most successful effort to base human thought and human conduct on facts rather than upon authority or upon the mere expression of opinion. Evidences of this method of attack are to be found as far back as there are records of man's conscious attack upon social and economic problems. Due to the fact, however, that the survey has recently developed with such rapidity and its use has become so prevalent, there is a common impression that it is of recent origin and that the method which it uses is of recent development. This impression is doubtless due to the rather universal acceptance of the scientific spirit beginning some thirty or forty years ago and to the more recent development of research techniques, the use of statistics, the application of measurements and tests, and the extension of scientific investigation beyond the limits of the physical sciences to which they were originally largely confined.

A Survey Defined

Due to the fact that many differing types of activities have been described by the use of the term "survey," it seems necessary that for the purposes of this paper the writer define the term as it will be used throughout this discussion in order that his position at various places throughout the paper may not be misunderstood, and further, to the end that his position with reference to certain studies and investigations which are not surveys as he is using the term, may not be misunderstood; also, that persons not familiar with the survey as a scientific method of fact-finding and fact-interpretation shall not apply the conclusions reached with reference to that special technique to those arrived at by investigations, studies, or inquiries of an entirely different character.

Defining a school survey, Caswell, in his book on *City School Surveys,* says:

> There are two necessary steps involved in a real survey. The first step is an analysis as complete as possible of the facts in the individual situation studied; the second is the development of a program of advancement which provides a basis for

*An address delivered before the annual convention of county and city superintendents at Riverside, October, 1931.

progress toward a recognized goal. In short, the survey method is that process through which enterprises are provided with related facts which are then made the basis for intelligent action. It is the connecting link between research and action.[1]

Having defined the survey as a general technique, we may now proceed to the definition of the city school survey. Sears defines the survey as follows: "A survey is a scientific inquiry which obtains facts about the present efficiency of a school system, and on the basis of these facts offers constructive proposals for desirable improvements."[2]

Caswell says there are two general groups of educational surveys. One group deals with subject-matter or administration problems, the other group deals with localities. A survey of the first type would deal with such problems as a modern foreign language study, or the problems of educational finance. The second group would deal with regularly organized administrative units, such as city, county, state or higher institution surveys. Surveys of the first type have characteristically been dispassionate, impersonal, and have been easily controlled within the limits of what is commonly accepted as good scientific procedure. Surveys of the second type, since they have invaded fields wherein regularly and legally constituted governing agencies and administrative groups have been at work, have been occasions for bitter and cynical criticism on the one hand, and most glowing and optimistic prophecies on the other.

Dr. Ellwood P. Cubberley, in his editor's introduction to Sears' book on *The School Survey,* specifically sets forth both the proper nature of a survey and the ends or goals necessarily to be desired as an outcome of survey procedures applied to public school problems.

> The school survey is a tool which has enabled us to develop an important form of educational engineering, by means of which the problems of a school system may be determined, a more intelligent procedure in the organization and administration and supervision of a school system may be formulated, waste may be eliminated, and the returns on the investment of time and money and human effort put into education may be materially increased. As the science of engineering is based on a thorough survey of conditions and problems, exact measurement, experimental control of processes, and a reorganization and readjustment of procedures in the light of facts, so educational engineering must be based on a thorough survey of conditions and problems, a careful study and testing of existing procedures, and the formulation of a remedial and constructive program to replace inaccurate procedures, subjective opinion, and wrong administrative organization and methods, that waste in time and money and energy may be prevented. It is this new technique that the school survey has brought to educational work, and in consequence the survey stands today as our most important means for educational diagnosis. School administration, as a result, is rapidly being changed from guess-work and the use of practical-experience procedures into the science of increasing educational returns through the application of modern methods to the problems of the school.[3]

This statement from Dr. Cubberley emphasizes the professional character of the survey, both from the standpoint of its use and from the standpoint of the application of the results of the survey to the improvement or betterment of public school practice. One cannot conceive of the survey, as described by Dr. Cubberley, becoming a tool to be used in the

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[1] *City School Surveys,* Hollis Leland Caswell, Ph. D., Bureau of Publications, Teachers College, Columbia University, 1929.
[2] *The School Survey,* Dr. Jesse B. Sears, Houghton Mifflin Company, 1925.
[3] Dr. Ellwood P. Cubberley, editor's introduction, Sears' *The School Survey.*

hands of the layman for the accomplishment of any purposes in connection with public education to which laymen ordinarily direct their efforts.

In making this observation the writer wishes to emphasize the distinction between a survey and an investigation. In no sense must this conclusion of his be accepted by his readers as any expression of opinion on his part that the layman may not properly investigate public education from any angle toward which his interest may turn him. It in no sense limits the right of the layman to ask questions as to the efficiency of public education—its economy, or with respect to any other element toward which his attention may be turned; it merely emphasizes the writer's firm conviction that such procedures under lay direction should be properly labeled as "investigations," "inquiries," or "studies," and should not be confused with the technical and professional techniques to which the term "survey" is properly applied. If this distinction were made there would be less danger that selfish groups would, under the guise of co-operation and sympathy with public education, create impressions and opinions in the public mind in conformity with their own special wishes and desires, but in fact detrimental to the best interests of the public program of education.

In this connection Dr. Cubberley goes on in his next paragraph to say:

> Begun only a decade and a half ago, the school survey has now become common and is used everywhere. Still more, it has been standardized as to type and purposes and procedures, and has been established as an important part of our administrative technique. Fortunately, the movement is now passing over into the self-survey, made by the local educational authorities, and still further into the continuous self-survey through the creation of city and state departments of statistics and research. This is a most desirable culmination of the movement.

Here is specific emphasis of Dr. Cubberley's opinion that the survey technique is not properly used by persons who are proceeding to investigate the school systems or to impress school administrators, boards of education and communities with their particular opinion as to public school policies. Throughout this paper it is this aspect of the present status of the school survey movement that the writer wishes to keep continuously before his readers.

The History of the School Survey Movement

The period from 1820 to 1840 is known in educational history as the period of the public school revival. It was during this period that the American public became conscious of its responsibility for the public school program. Prior to this time the control of the school had rested with the privileged or ruling class. This group had traditionally utilized the school to its own selfish ends. If the ordinary layman had access to educational opportunity he regarded it as a gift from those in authority. He was too overjoyed at the privilege to give careful consideration to the kind or type of privilege offered, and he gave little or no thought to the aim or goal toward which the whole program was directed.

When, then, America was confronted with the task of administering her public school system through the medium of public opinion, and when it became necessary for the layman to know and understand the aims and purposes of education, as well as the needs of children in the matter of

education, programs of public education to this end were necessary. It was to such ends as these that the States of New York, Massachusetts, Rhode Island undertook campaigns of public education in the interests of their schools. For many years prior to this time committees of laymen had visited schools, examined pupils, given directions to teachers, and had in a local and personal way administered detached school units. The conditions growing up under such a plan led the Rhode Island legislature to observe that the benefits and privileges of education were not equitably distributed, but were in fact reserved for the more favored cities and localities. Accordingly, they authorized the Governor to appoint a person to examine the schools and to report methods of improvement for them.

It was in response to this action of the legislature that the Governor appointed Henry Bernard, who became our first public school survey agent. His work and the results are well known. He was followed by Horace Mann, who performed a similar service for the schools of Massachusetts. Here again the professionally trained educator is the survey agent and his activities covered both fact-finding and fact-interpreting.

In 1875, Charles Francis Adams induced the board of education at Quincy, Massachusetts, to bring Colonel Parker to the services of the children, the staff and the board of education of that city. Mr. Adams observed the results of the attempt of lay committees and laymen to inspect schools and direct their administration, supervision and management. Realizing the futility of such procedures, he said, "Education is now a science, even common school education. Being a science, it must, like all other sciences, be carried forward by specialists and not experimented on by amateurs." Here again you see the recognition of the necessity for fact-finding, but you see along with it a recognition of the equally important fact that there must be fact-interpretation by a professionally trained person.

In 1900 Chicago surveyed its school system under the direction of a lay committee. This great city brought to its assistance in connection with this survey the services of the best trained professional leaders which the country at that time afforded. Here we see working in direct application to the educational problems of a great city the principle that the survey must go forward under trained, professional leadership. The results of this survey under this leadership were startling and their effect upon the public school system of Chicago was outstandingly constructive.

In 1906 Cleveland attempted to duplicate Chicago's accomplishment and appointed a committee consisting of a real estate man, a broker, a banker, a physician, a steel worker, an attorney, a stone company executive, two presidents of institutions of higher learning, and an author of history and science books. This committee, however, failed to accept the principle of trained professional services in connection with its study of its school system, with the result that the Cleveland survey was to all intents and purposes a failure and effected no favorable modification of practice in Cleveland with reference to administration, supervision, management or teaching. It was a reversion to the old lay type of study and investiga-

tion of school problems which the previous century had demonstrated as ineffective and inefficient.

We are now down to the sudden growth and popularity of the survey movement and to a point where, in the minds of the average layman and many school administrators, school surveys originated. The Boise, Idaho, survey of 1910, under the direction of Calvin Kendall, Commissioner of Education in New Jersey, marks the beginning of the recent survey movement. It was followed in 1911 by the survey of the East Orange schools under the direction of Paul Hanus of Harvard, and the Montclair, New Jersey, schools under the leadership of Dr. E. C. Moore.

In discussing this recent survey development it seems best at the outset to set up the criteria for a survey used in reporting survey activities since 1910. These criteria set up in Caswell's book on *City School Surveys* are the following:

1. Was the survey conducted by an agency outside the regular school system?
2. Was the report published?
3. Was the study of the school system the major consideration or was it incidental to another kind of survey?
4. Was the primary purpose of the survey the betterment of the local school system?

Applying these criteria, we find out that between 1910 and 1927 there were 181 school surveys. It is obvious that during this period there were many studies, investigations and inquiries having to do with phases of public school management, but for some reason or other these studies failed to meet the definition and the criteria which we are using in this paper. Again may we emphasize our contention that the exclusion of these studies, inquiries and investigations is in no sense of the word any reflection upon their value. It is merely for purposes of evaluating the survey movement proper that these are excluded from consideration.

Agencies Which Have Made City School Surveys

During the two decades since 1910, five distinct types of agencies of the school survey have functioned. Type 1 is the individual school surveyor, of which Calvin Kendall, Paul Hanus, E. C. Moore are typical examples. Experience, however, soon taught that no single individual could collect and interpret the volume of data incidental to a school survey. Type 2. This agency consisted of survey commissions under the leadership of such men as George Strayer, Ellwood B. Cubberley, Franklin Bobbitt. The procedure was to collect educational specialists from all parts of the country, have them assemble in the locality to be surveyed, collect their data more or less independently, and leave it to the director to assemble and edit the report. The New York survey of 1912, the Bridgeport, Connecticut survey of 1913, the Denver survey of 1916 are notable examples of the commission type of survey. The third agency of research were those conducted by foundations and bureaus of research. Here we have the Russell Sage Foundation, General Education Board, Commonwealth Fund, municipal bureaus of research, and private research bureaus such as the California Taxpayers' Association. Such agencies have played a limited part in conducting city school surveys. In general, their interest

in surveying public schools has not been direct but has been incidental to surveys of municipalities and other governmental agencies. Many of their studies do not meet the definition of "survey" and have not been included in those listed. Examples of this type of survey are the Georgia survey of 1912, the St. Paul, Minnesota, survey of 1913, and the Akron, Ohio, survey of 1917.

The United States Bureau of Education has taken an active part in conducting city school surveys, and it has been a definite policy of the various commissioners of education to consider the conducting of surveys as a part of the work of the Bureau. The Bureau has published some twenty city surveys since 1911. The surveys at Baltimore in 1911, San Francisco in 1917, Memphis in 1919, and Wheeling in 1921 are the most notable.

Several state departments have followed the lead of the United States Bureau and have made it a part of their function to make surveys of local school systems. Few of these, however, have been published, and few are worthy of classification as real surveys.

The fifth, latest and most active survey agent are the staffs of colleges of education. Eighty of the 181 surveys listed have been made under this type of leadership. The most conspicuous agent within the field is, of course, Teachers College in connection with Columbia University. This agency alone has conducted some forty surveys and has trained those responsible for a major proportion of all the other surveys made under the direction of colleges of education. Since 1927 more than 75 per cent of all the surveys made have been made through the agency of the faculties of colleges of education.

Results of Surveys

A study of the results of surveys shows that surveys have exerted a vital influence in developing the educational programs of the various cities surveyed. According to Caswell's study, the greatest influence has been in the development of school plants; second, the survey has influenced the development of the educational program.

The length of this paper does not permit one to show specific gains effected by survey techniques covering in detail organization, work of the board, administration, school finance, personnel, school opportunities, curriculum, school plants, health, etc., nor can we present the experience of individual communities in the matter of public opinion and public attitude toward the school programs. In general, surveys have been beneficial to the degree and to the extent that they have been comprehensive, sympathetically conducted, scientifically organized, and led by competent professional educational experts competent by experience, training and viewpoint to advise and direct programs of public education in the interests of the great masses of the people. Where surveys have proceeded under the leadership and direction of persons serving special interests or interested in investigating phases of our public school system for the purpose of furthering personal interests, viewpoints, opinions and policies, the results have not been so satisfactory.

In addition to the direct results of surveys, there have been certain incidental gains in the devising of techniques which have made it possible for school administrators to carry forward self-surveys, and to develop continuing building programs designed to meet school housing needs for periods of years. Important contributions have also been made to the solution of problems of financing the schools, the classification and progress of schools, and the organization and administration of schools. All of these, however, have been in the professional aspects of school administration and have not been incidental to investigations or inquiries directed at isolated phases of school administration.

Continuously, over a period of years, the attitude of public school men and the public in general toward the survey has been in the process of change. At one time the survey commissions, particularly those representing foundations and research bureaus, were losing favor, but with the development of other and more satisfactory agencies, sentiment changed and recently there have been more surveys than formerly. It is safe to say that under proper auspices and with careful direction the survey will continue to serve public education in this country effectively and for its betterment. This is to presuppose that the public school men of America will not permit the survey to become a tool in the hands of groups who shall make use of it to impress their particular viewpoints or policies upon public education, but rather that the school men of America will see to it that the true survey shall become more and more the tool for scientific fact-finding and professional and expert interpretation of these facts in the interests of school betterment. This should include both proper regard and consideration for the rights of the children on the one hand, and due protection and safeguards for the taxpayer on the other. It should guarantee first of all that the taxpayer shall not be permitted to make use of the survey as a tool for depriving the children of those educational rights and opportunities which are the very foundation of our democratic government and the most notable accomplishment of our civilization, and guarantee equally, on the other hand, that complacent, incompetent, inefficient and visionary school administrators shall not be permitted to squander, or to waste, or to inefficiently utilize moneys generously provided by an indulgent public for the financing of our program of public education.

THE PASADENA CITY SCHOOL SURVEY

Many of you have requested a comment on the recently completed survey of the Pasadena City Schools. Since this survey was conducted upon an entirely different plan from that usually followed by the California Taxpayers' Association, and exemplified some entirely new features and procedures, some comments and explanations are probably necessary to a proper understanding of the report. Such comments will necessarily criticize certain policies and procedures, both of the California Taxpayers' Association and of school officials. These criticisms will, however, be directed wholly at policies and procedures rather than at individuals. They will be offered in a most kindly spirit and with a sincere hope that they may be constructive.

Historical Statement

Some two and a half years ago the California Taxpayers' Association was brought to Pasadena, presumably through the influence of the officers of the local unit of the Association, consisting of some seventeen members, to survey the municipal government. As a part of the survey of that unit their research staff appeared in the public schools and began collecting information throughout the system. Due perhaps to an oversight, no approach was made to the Board of Education or to the Superintendent. We do not know, even today, why the survey of the schools, an agency of the State, was undertaken as a part of a municipal survey, and much less why it should have been undertaken without consultation or conference with school authorities. The Pasadena schools had recently been surveyed by Doctors Hart and Peterson of the University of California. The Board were proceeding as rapidly as possible to carry into effect the recommendations of that survey. They had proceeded well through the building program, had changed their unit of control, reorganized their staff, revised their rules of procedure, instituted a program of increased teacher load, effected a reduction of non-certificated personnel, and adopted other measures likely to result in economical and efficient operation.

There was no local demand for a re-survey. That the citizens were satisfied with their schools and with the policies of the Board pertaining to them is evidenced by the fact that at the recent elections there have been no issues raised pertaining to the schools, and the elections have passed practically uncontested.

If the California Taxpayers' Association had consulted with the school authorities they would have found the Board, the Superintendent, the staff and the entire teaching corps as committed as they were to the policies finally set forth in the survey. In so doing they would have effected substantial savings of money, time and effort, and practically the same ends would have been achieved. This statement is not intended to mean that there are no benefits as a result of the survey, but only that a co-operative approach to it would have been mutually advantageous.

This leads to my first comment: *It is that the approach to a school system for survey purposes should always be made through the constituted legal school authorities elected by the people, responsible to them and duly and legally designated by our Constitution as the agencies fully acccountable for school policies in our various units.*

Since it is true that once a survey has been proposed it is tantamount to an admission of irregularities and mal-practice in the public mind for a board of education or a superintendent to refuse to accede to it, the California Taxpayers' Association should, in my judgment, use great care in capitalizing this condition. There is serious question if such procedure is in *public interest* or if it will in the long run be conducive to those relationships that ought to exist between those who administer the schools and those who control and pay for them.

The Pasadena survey was a co-operative survey. No board of education could gracefully accede to any other plan or accept the results of any

other type of survey. This led the California Taxpayers' Association to the acceptance of two provisions which are quite apart from their usual procedures and which are unique for the Pasadena project. These are (1) the Management Committee, and (2) a Survey Staff of five members.

The Management Committee

This committee consisted of two members representing the California Taxpayers' Association, two members representing the Board of Education, and a fifth a recognized educational authority mutually acceptable to both parties.

This committee prescribed the scope of the survey, selected the director of the Survey Staff, approved the other members of the staff, and had final approval of the report. The services of this committee were invaluable from the standpoint of the schools.

The Survey Staff

The staff selected to collect and interpret the data consisted of the Director of Research of the California Taxpayers' Association, the Director of Research of the Board of Education, and three professional educators mutually acceptable to both parties. No data, interpretations thereof, or recommendations based on data were to be included in the published report until approved by a majority of the staff.

These two unique features of the Pasadena survey are commended to school boards and school administrators as prime requisites for any survey. Since the Chairman of the Board of Directors of the California Taxpayers' Association has publicly approved these procedures, there seems to be no good reason why school interests as well as taxpayers' interests may not hereafter be adequately conserved by similar safeguards in all future surveys.

Dr. Milbank Johnson's letter to the President of the Pasadena Board of Education, and released through the press, presumably presents the attitude of the California Taxpayers' Association toward these provisions. The letter follows:

It is a great pleasure to be able to send you with the compliments of the Board of Directors of California Taxpayers' Association a bound copy of the Pasadena City Schools Survey. We hope that you, as a member of the Board of Education, are as happy to have this large, important undertaking brought to a successful conclusion as we are.

We are of the opinion that this type of co-operative activity, which seeks to establish sound policies on the basis of scientific research, is going to grow. It is going to grow in popularity and importance. The Pasadena report will, no doubt, make history. It demonstrates, on the one hand, that boards of education and their professional staffs are sensitive to the needs for economy in governmental administration. On the other hand, it reveals that taxpayers' associations may be just as desirous of providing adequate service and safeguarding the educational rights of children as those officially charged with these activities and, after all, our responsibilities for the advancement of the public welfare are the same. We are but working through different channels. For our respective groups to be brought into a harmonious and effective co-operative arrangement reflects credit upon the intelligence and foresight of each group.

Let us compliment you for the substantial reduction in your budget for 1931-32, made possible, in part at least, by the intensive study of Pasadena school problems jointly carried on during the survey.

I sincerely hope that our relations in the future will be as pleasant and as fruitful of results as they have been in this instance.

* * * * * *

Character of the Survey

The Pasadena School survey is a true survey in the full sense of the word. The data collected was adequate and factual and pertained to the school system as a whole. The interpretation of the data was made by competent, well-trained and professional experts in education for the purpose of the betterment of the Pasadena schools. The Superintendent of Schools, his staff and the teaching corps have accepted the survey as a valid investigation of the schools, conducted under circumstances and in a manner which commend its careful and thoughtful study. While there would be sharp disagreement at many points, occasional instances where the data is to be seriously questioned as to its accuracy, and some comparisons and standards of doubtful validity, we, nevertheless, recognize the many fine studies and excellent recommendations made and accept them in the best of spirit, firmly resolved to profit by them.

The second criticism pertains to the functions of the Educational Commission of the Association. While the membership of the Commission is above question or the slightest criticism—in fact, the California Taxpayers' Association are to be highly commended for their excellent choice of personnel for this Commission—there is widespread sentiment among school people that the Commission does not give to the survey activities of the Association that close supervision absolutely essential for the proper conservation of public interest. Since the Survey Staff of the Association is strictly a lay research group without representation thereon of thoroughly trained, competent and experienced professional educators, the Commission must supply this deficiency. Therefore, the Association, as well as the Commission, are respectfully urged to consider a change of policy looking toward a better representation in their survey activities of the professional aspects of education and the viewpoints of those upon whom devolves the responsibility for administering the schools. The school men of California feel strongly on this point.

All Interests Must Deal Intelligently with the Public

Employees of boards of education as well as employees of the Taxpayers' Association, should be temperate and careful of their public statements. For teachers facetiously to refer to the Taxpayers' Association as "tax dodgers" and the Association employees likewise to characterize teachers as "tax eaters" is possibly a two-edged sword that cuts equally from the public confidence and support both groups sorely need.

To make use of this period of economic depression as one during which campaigns for the reduction of school offerings and the unnecessary limitation of educational opportunities is conducted, is unwise unless the procedure is based on factual data and scientifically directed, even though such campaigns are popular and effective at such times. The public are quite ready to grow easily distrustful of all governmental activities and all public officials. Surveys should not be utilized to these ends. Such

usage is not in accord with the scientific spirit or with good research procedure. The California Taxpayers' Association equally with the teachers, is interested in the conservation of these values. To destroy them would be no compliment to the intelligence, and of no benefit to the interest, of any group.

What the writer wishes to emphasize is his strong conviction that unless all the interests involved in public education are properly represented and adequately protected in surveys, great damage may be done, not through any intentional or premeditated attack upon such interests, but rather through the building into the public mind of attitudes during this period of depression that will persist and hamper progress long after the depression is forgotten.

Private foundations and private research bureaus lost favor with the public with astonishing rapidity some ten years ago. This came about when the public became convinced that they were serving private and selfish interests. The California Taxpayers' Association not so long ago operated under the slogan, "Taxes Must Be Reduced." The schools must not be approached under such a slogan. To do so clearly would be against public interest. Even the more recent statement of the purpose of the Association, "To aid in bringing about, through nonpartisan and nonpolitical means, in the interest of all taxpayers in the State of California, by mutual effort, the greatest possible economies consistent with efficiency in the collection and expenditure of public moneys in the State of California, and its counties, cities and other political subdivisions," must be interpreted before it may be used as a goal toward which the survey of a school system may safely be directed. There must be recognition of the interests of children as well as the interests of the taxpayers.

My conclusion is that of a distinguished scholar and student of education in California in no way identified with public education, the Association, or any interested party, who, after reading the Pasadena survey wrote me as follows:

> In my opinion Dr. Hughes, Research Director of the Pasadena Board of Education, should not have been included on the staff, nor should Mr. Stone, Director of Research of the California Taxpayers' Association, for if surveys are to merit public confidence we must have competent and unbiased survey agencies entirely impersonal in character and in no sense representative of any issue or interest with which the survey is concerned.

We need surveys and survey services in California school systems. Many school administrators and officials have been negligent in that they have not made proper accounting to the public of their stewardship. Wasteful and inefficient practices are prevalent in our schools. These should be revealed and corrected. The California Taxpayers' Association is to be commended for its honest concern about problems of taxation and the wise and economical expenditures of funds.

The taxpayer must get full value for the money he gives for school support, and the school administration must join hands with the layman in active co-operation to these ends. Let us then join hands—the school administrator, the layman, the teacher, the patron, the taxpayer, both large

and small—and devise survey agencies of such unquestioned competency and disinterestedness that we may all submit our problems to them with full assurance that they will proceed in the task of fact-finding and fact-interpretation in a scientific manner, safeguarding equally lay and professional interests to the end that our children shall have that rich educational opportunity that is the recognized birthright of every child in America. Let us not forget that the future history of America, if not of our whole civilization, is being written today in the classrooms of our schools, and that the one outstanding achievement of our democracy is our school system. As compared to it nothing else that we have done is worthy of serious consideration. Let us deal fairly with our schools.

JEREMIAH WAS RIGHT*

THOMAS H. BRIGGS
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(Condensed from *The North Central Association Quarterly*, December, 1931)

In the address here condensed Dr. Briggs contends that not all is well with secondary education with such boldness as to prompt the editor of the NORTH CENTRAL ASSOCIATION QUARTERLY *to remark that "not all will agree with him as to the wisdom of so doing nor as to his proposed remedies for alleged defects in education."*

In another address, under the title of "A Program for Secondary Education," delivered before the Department of Secondary-School Principals in Washington, D. C., February 22, 1932, Dr. Briggs reiterated many of the complaints against secondary education, but he also offered a constructive program for reform. He again pointed out that the task calls for "a group of our ablest men and women who, freed from other obligations, can give their entire time for a long period of uninterrupted work." That part of Dr. Briggs' Washington address dealing with principles for the reconstruction of the secondary program is reprinted from the "Proceedings of the Sixteenth Annual Meeting of the Department of Secondary-School Principals of the National Education Association—Bulletin Number 40."—EDITOR'S NOTE.

JEREMIAH had a habit which philosophers have praised but which his people did not like—he told the truth. Seeing conditions as they were, he admonished the people not to pull down and destroy, but to build up that which was good. To this day his name is used in contumely to indicate a person who talks of those things which others prefer to ignore. But Jeremiah was right.

All is not right with secondary education. With increasing frequency some Jeremiah who has an ideal and who looks calmly at the facts, has raised questions that should be disquieting and has indicated weaknesses which should alarm intelligent citizens. In our pride of accomplishment it is not wise to overlook sincere and sensible criticism.

*An address delivered before the North Central Association of Colleges and Secondary Schools at its annual meeting in Chicago, March, 1931.

There is no general agreement as to what secondary education is or as to what it ought to achieve in the United States. With great pride we proclaim that we have more high schools, more magnificent structures, better equipment, greater enrollment and a more expansive curriculum than any other people have dreamed of having. Though it has been argued that the only justification for free education is that the state may preserve and improve itself and though this principle has been verbally accepted generally, this verbal acceptance means nothing. The only acceptance which would have meaning is one that proceeds to lay out a program that promises a maximum assured contribution to the welfare of the supporting state. This has been attempted in so small a number of instances that it may safely be said that the principle has not been accepted at all, nor has any other justifying principle been accepted that generally affects practice. Secondary education has become a fetish accompanied by an intensification and a degradation of significance. We have become a profession of tabulators. We publish more studies that are of no pertinence to needs, that are incomplete, and subsequently neglected by practitioners, than all the other professions combined.

The prime need at the present time is for a philosophy that will lay out a program, clarify our activities, and determine what research is necssary. Research without a philosophy is like any other skilled activity without a teleology—wasteful, fortuitously effective, and stultifying to those who have ignorant faith in it. It is far easier to catch up the *jargon* of science than its *spirit* and its procedure.

During the past decade we have had a movement toward curriculum reform. Has it succeeded? It has not. One can scarcely deny that courses of study have been improved; but when contrasted with the needed reform these achievements have been insignificant. And worse still is the complacent belief in scores of communities that the task that was undertaken has been achieved.

Curriculum experts are of three types:

1. The *theorist,* who lays out a comprehensive program; his contributions have been to show a vision—nothing more.

2. The one who knows a single field, whose vision is limited and who begins with the postulate that his subject should at least be undisturbed. He may have improved individual courses of study but he has signally failed to reform the curriculum.

3. The pseudo-scientist who collects and tabulates and concludes that what is common must be best. To the discredit of our profession the conclusions of this type of expert are frequently accepted without critical consideration. We lack agreement as to what we are trying to do in our secondary schools and the wastage is beyond computation. The public with its fetish for higher education is undisturbed and complacent in its ignorance. Such philosophy as we possess is usually academic, never applied with any degree of consistency. Conscious of our individual limitations and of the disgraceful failure of our high schools, we compromise ourselves and play the game, "doing the best we can." Why, secure in the

confidence of ignorant children and public, do we make no serious effort to buck the traditions that we know are bad and work towards a program that promises something better?

The facts are increasingly being published and the accumulation will some day arouse us from our complacency and impel us to co-operative action. When we honestly face the facts of indefiniteness of program, of failure to attempt such philosophy as we profess, of meager accomplishment and of dissipation by pupils of what they have learned, every individual feels his helplessness. So long as we feel this we are powerless, and yet every great revolution has begun by convictions of wrong accumulated in individuals who finally were moved to action, and being moved found many others fighting by their sides.

The way out? First of all we must make up our minds to look at facts. In so far as they are pleasing, let us be pleased and encouraged to higher accomplishments. In so far as they are disturbing, let us be disturbed and pass on information that will disturb others to action. When a sufficient number of people are disturbed they will provide for remedial action.

We have failed to make education appropriate for any large fraction even of the adolescent population to say nothing of the larger fraction that has left school. Whatever our ideals we can never make education appropriate until we have agreed on what secondary education is and what it should attempt. And we have not realized that education is not apart from life. It is futile to expect schools for the education of youth to achieve results when the leaders and the vast majority of matured adults have such indefinite and widely varying ideas of what the good social and political life is. We must demand that society agree on its ideals before we can formulate a program of education that is significant and safe.

It is obvious that no single school, no local community can meet the challenge that confronts us. The task is too extensive, too difficult and too costly to be undertaken by any unit smaller than an entire state or, better, a national commission, composed of the highest type representatives of social and educational philosophy, psychology, sociology and administration, of publicists, sociologists, economists and real experts from contributory fields of learning. They should devote their whole undivided time to the problem. Their first challenge would be to survey the facts that are known and then to define the problems and lay out a program for solution. Then would follow a truly critical study of all research findings, provisions for such additional studies as may be necessary, experimentation under ideal and under normal conditions and finally the promulgation of a program of education. It will cost millions of dollars, though not so much as is now wasted annually in misdirected effort. But who can estimate the contribution to national happiness and prosperity when education is made truly functional according to the needs of civilization.

Is the challenge too great, the task too big to be undertaken? Certainly for an individual, but not for the co-operative effort of all.

A PROGRAM FOR SECONDARY SCHOOLS

(From address at Washington, D. C., February 22, 1932.)

First, *public education is a long-term investment by society to perpetuate itself and to promote its own interests.* This thesis with its more important implications I have elaborated in the Inglis Lecture for 1930.* It is so sound that I have no doubt that it is irrefutable. It is so contradictory of many current practices wastefully supported by public funds that long and far-seeing effort will be necessary to make even partial application. It is so important that it cannot be neglected by those who take seriously their professional obligations. The very difficulty of its application should emphasize the challenge, especially to such an organization as this association.

Second, to accomplish the preservation and the promotion of the kind of organized society that we approve, *an appropriate education should be provided for all youth.* This principle, reflecting a growing sentiment, was, with a limitation to the age of eighteen, proposed by the Commission on the Reorganization of Secondary Education. It received general verbal acceptance by both the profession and the public. But verbal acceptance is not sufficient. Our practice falls far short in two respects. In the first place, secondary education is still selective—to no such extent as in previous generations, but still so far that approximately a half of the adolescent population is not in school. This means that society does not and cannot make them as competent as is possible by increasing their powers to the making of their communities better places in which to live and in which to make a living. It is, moreover, a denial of the principle of democracy. How can we justify the expenditure of taxes collected from all for the education of only that fraction who have inherited or by the discriminating program of the schools have acquired only one of several types of ability? The principle, which is anchored in democracy and on the successful application of which democracy is dependent, maintains that an appropriate education shall be provided for *all* youth. The word "all" is impressively and challengely inclusive.

In still another respect our practice falls short of our profession. The secondary education that is offered, especially in the smaller schools, is far from being appropriate to the ability, capacity, aptitudes, interests, and probable needs of a majority of youth, perhaps of even a majority of those who persist because of the popular fetish that all youth should attend secondary schools. No other country, with the possible exception of Russia, makes any profession of ideal to provide a secondary education, appropriate or not, for all youth. The secondary schools of all other countries than ours cater only to what they call the intellectual elite. But democracy has a different ideal. It sees, perhaps dimly, and holds with an unshakable faith that democracy cannot continue, certainly cannot be successful, unless every constituent unit of its citizenry has the opportunity to develop maximally such powers as he has, at the same time being indoctrinated with the ideals of the society that we accept.

Even if one inclined to take the European point of view, the question is made wholly academic for us by the fact that industry decreasingly needs or will use youth. Our success in invention and industry has brought about a phenomenon of a country that can produce more of practically every kind of commodity than it can consume or sell, and the ultimate solution of our economic difficulty must be an equitable distribution of labor for the necessary number of hours a week to those who need to work. Every youth who takes a job now displaces an adult, thus aggravating a condition admittedly bad. Because of this situation pressure will in the future be increased to keep youth in school. There is nothing else to do with him. Consequently, then, an appropriate form of education must be provided. This will of necessity include far larger emphasis than that to which we are accustomed on preparation for the satisfactory use of leisure. Not only youth but adults as well are sure in the new era to have more spare time on their hands than mankind in general has ever had in a civilized world. Whether they can use it profitably for themselves and for society depends largely on the willingness of secondary schools to break with a narrow tradition and to prepare a program commensurate with the need and the possible opportunities for a wholesome enjoyment of leisure.

**The Great Investment.* Harvard University Press.

Third, inasmuch as no program can expect to hold all youth to formal schooling until they reach adulthood, *secondary education must, so far as possible, be maximally good to the extent to which it is pursued.* There is as yet no means of knowing with anything like accuracy which pupils after the law ceases to hold them will appear at school on any morning. At present the ones who drop out with a smattering of this and that in a subject or even with sound preparation for future work which they never take represent by any rational bookkeeping an alarming waste. Cultivation that does not fructify is a poor investment. It is a relatively simple matter to arrange so that they are good to the extent to which they are pursued all of our courses of sudy except those in advanced mathematics and foreign languages, and in them the ideal can be approximated. This principle must be accepted and applied or else students must justify their ability to profit by courses meager in immediate but rich in deferred values, perhaps, as in England, "give an undertaking"—that is, post a bond—to continue the studies until there is a reasonable opportunity for successful fruition. In other words, our schools must become intelligently and economically selective. Any other policy, including that of *laissez faire* under which we now work, will assuredly result in a waste of public money and of individual effort that no one can justify. In all probability if the courses revealed convincing values as they progressed a larger number of students would wish to pursue them further.

There are, of course, other principles that need to be established, and the three presented must be greatly elaborated, as they cannot be in this brief paper, before their importance is recognized and the wide nature of their effects can be realized. But these are sufficient to illustrate the sort of philosophy that we need as criteria for evaluating our practices and as directive principles for developing a new program.

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More and more I am convinced that the beginning of a solution of the problems that confront us in secondary education must be found in the ideal junior high school. Although rapidly settling into a tradition which, though an improvement over old practices, is far from what we hoped, it still offers more freedom for reform than the more advanced grades. Moreover, only as it succeeds will the senior high school find it possible effectively to reorganize its program. We need an intermediate school which after the elementary grades will by exploring the interests, aptitudes, and capacities of each individual ascertain the kind of advanced education for which he is fit, a school which at the same time will reveal to him the varied opportunities and the richness in the varied fields that lie beyond him. Then by using all personnel data and instruments of measurement, guidance can be made effective. Then the school, *persona rei publicae,* the parents, and the youth working together can intelligently decide on what, in the light of all evidence and information, seems to be the most promising path of procedure for each individual.

PRINCIPLES FOR STIMULATING, RELEASING, AND CAPITALIZING THE CREATIVE ENERGIES OF TEACHERS*

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CREATIVE energy does not necessarily differ dramatically from any other kind of energy. With reference to teachers' professional activities the adjective *creative* is used chiefly to differentiate those efforts that are directed to considered innovations or experiments from those energies that are spent in continuing or repeating class-room and other institutional behaviors to

*Abstract of address before the meeting of the Department of Supervisors and Directors of Instruction of the National Education Association, February 23, 1932, Washington, D. C.

which the teachers have become accustomed or in mere conformance with specific directions given by supervisors.

If this definition be accepted, it is evident that no considered modifications may be made by teachers except as they are free and able to create. Moreover, it is equally evident that it is through such creativeness that they may come to construct more adequately, and to encourage children to consider plans for further construction, for innovations, and for new adventures.

Fundamental to any program for stimulating, releasing, and capitalizing the creative energies of teachers is the supervisor's own reconception of education. He can succeed in such supervision only if he can bring himself to the realization that in the last analysis education is not something to be got, labelled, and certified; indeed, that it is not even the knowledges and skills which might imply the attainment of social objectives. He must appreciate that education is the stimulation of the desire to learn, a readiness to seek one's own answers to his questions, and the habit of success.

At the level of primary grades such a revolutionary conception has gained relatively wide acceptance in all progressive school systems; hence, supervision for the capitalization of teachers' creative energies and pupils' creative energies may frequently be found in the kindergarten and first and second grades.

Less frequently are such happy conditions found in the reading, spelling, arithmetic, and geography classes of the middle grades. Increasingly, however, class projects and school life activities are finding places in these school years. In assemblies, clubs, home-room organizations, and traffic squads, in art, manual work, physical education, and literature there is frequently an implied acceptance of the new conception of education as purposing, planning, executing, and evaluating. Hence, in such aspects of the elementary school curriculum, supervision for stimulating, releasing, and capitalizing creative energies of teachers is not difficult.

The Fol-de-rol of Academic Traditions in High School Life

At the junior and senior high school levels are found interestingly contradictory patterns. Hard-boiled demands for lesson-learning and mastery persist side by side with student activities and good fellowship between teachers and pupils. Elaborate syllabi, college entrance examinations, "high standards," failures, repetitions, and attempted eliminations exist in the same school and are sometimes sponsored by the same teachers and administrators as are adjustment classes, intra-mural athletics, dramatics, councils, publications, orchestras, Hi-Y's, dances, parties, and public speaking classes and contests. The high school's adaptations are, in fact, being modified by the pupils themselves through their passive resistances by which they challenge the superimposition of academic fol-de-rol with its home assignments, detentions, and ineligibilities.

It is symptomatic of the divided lives that most of us live that we subscribe to the value of subject-matter with at least a timid obeisance to "thoroughness," "mastery," "scholarship," "academic standards," and the rest—even though we are in fact convinced that education is a way of living, that its objectives are civic, domestic, and economic efficiency, good-

will, and worthy leisure-time interests and activities. The traditional is so respectable; our own vested interests in "scholarship" are so firmly intrenched; scholarship is so easily measured and objectified in terms of grades, semester hours, and the like, that we "safeguard" our adventures with life by casting anchors to windward—eligibilities, certificates, degree. And so we hobble our progress—perhaps cripple it.

Every study from Knight's "Qualities Related to Success in Teaching,"[1] to Barr's "Characteristic Differences of Good and Poor Teaching,"[2] and McLaughlin's "Case Study of Teachers Judged Successful and Non-Successful,"[3] from Charters and Waples' "Commonwealth Teacher Training Study,"[4] that of Cox,[5] and that of Irvine,[6] preliminary to recommending changes in the New York University School of Education curriculum, to Jacob's "The Relation of the Teachers' Education to Their Effectiveness,"[7] all point one way. Teachers do not help pupils advance toward the goals of education by means of their own erudition or by means of the teaching of facts and skills, but by being what they are and encouraging children to become all that they can attain to. Barr's study[8] of qualitative differences between teachers recognized as *good* ones and those recognized as *poor* ones were largely limited to discipline,[9] friendliness,[10] and socialized appraisals of pupils' responses.[11] With regard to many class-room practices of teachers that have seemed very important to so-called "experts," Barr found no significant relation between the activities of teachers recognized as "good" and those recognized as "poor."[12]

McLaughlin's study supplements the somewhat negative finding of Barr. He found that qualifications for teaching cannot be stated in terms of narrowly defined talents or of certain specific abilities; that significant qualifications are largely functional attitudes and abilities, the lack of any one of which will cause failure in the teacher's work. Successful teachers, he found, had had wider experiences, broader interests, greater likes and dislikes in youth than had non-successful teachers. Successful teachers showed greater ability to eliminate individual traits and to converge to

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[1]Knight, F. B., *Teachers College Contributions to Education*, No. 120, 1922, p. IX. ". . . the general factor of interest in one's work becomes the dominant factor in determining one's success in teaching."

[2]Barr, A. S., Public School Publishing Company, 1929. No *critically* significant differences were found in the twenty qualitative characteristics studied, though many have been contributing factors, chiefly personality factors. (pp. 120-121.)

[3]McLaughlin, J. O., *Phi Delta Kappan*, Vol. XV, No. 1, p. 184, June 1932. An abstract of a doctoral dissertation at Leland Stanford University, 1930. (Quoted in this report.)

[4]University of Chicago Press, 1928. Scholarship was number 19 in a list of twenty-five qualities valued by administrators on the basis of relative importance. Seventeen personality qualities were given higher ranks, six lower ranks.

[5]*Proceedings Department of Superintendence, N. E. A.*, 1928, p. 177.

[6]Irvine, Paul, "Relation of Undergraduate Preparation to Teaching Position among Graduates of School of Education, New York University," School of Education, New York University, doctoral thesis, 1928.

[7]Jacobs, C. L., *Teachers College Contribution to Education*, No. 277, 1928. Four out of five subjects which seemed to be significantly correlated with teacher-success were activity subjects—not ones generally contemplated by the sponsors of "scholarship" and "concentration"; they were manual training, home economics, constitution, practice teaching and general methods.

[8]Barr, A. S., *Characteristic Differences in Teaching Performance of Social Studies.* Public School Publishing Co., 1929.

[9]Table XVII. [10]Table XXI. [11]Table XVI.

[12]Pp. 98ff, including Table XLI. An exception may perhaps be taken for one item, the "move of the recitation," for which a coefficient of correlation of .768 was found, which indicates a forecasting efficiency of 36.5 on the basis of 100 for perfect accuracy.

necessary functional attitudes and activities than did non-successful teachers.

It is evident from the studies of Barr and of McLaughlin, therefore, that what a teacher is and what his potentialities for positive adjustments are become of primary significance for the supervisor, not only in the selection of his teachers but even more for stimulating, releasing, and capitalizing their creative energies while they are in service. The principles of supervision that concern us here are based on the nature of the teacher as a human being. As such the teacher is motivated by feelings and desires and ideals, by emotionalized habit, fear, anger, security, social approvals, and by an urge for self-expression.

No supervisor who does not take account of the vagaries of human nature can possibly promote creative teaching among the teachers whom he supervises. To the degree that he makes teachers publicly uncomfortable about their habits, he fails. To the degree that he stimulates fear or hostility toward himself or the innovations he espouses, he fails. To the degree that he promotes insecurity, drives teachers to malcontents for their social approvals, or thwarts their desires to express themselves in their own ways, he fails.

Conversely, to the degree that he succeeds in sublimating the emotionalized habits, fears, and angers so that they foster innovations, no matter how tiny such innovations may be, he succeeds. Habits of experimenting must replace those of *status quo;* fears for children's failures must replace fears for self; anger directed against obstacles to progress must replace anger toward the supervisor. To the degree that teachers find security, social approvals, and self-expression in the innovations, success is certain.

Eight Principles of Supervision

Principle I. Supervision for creative teaching consists in helping teachers to set up for themselves teaching-objectives which are, for them, dynamic, reasonable, and worthwhile, in helping them, so far as possible, to achieve these objectives, and in assuring them adequate securities, approvals, and rewards for their endeavors. In the beginning at least the quality or quantity of the children's creative productions are of minor importance.

Principle II. Supervision for creative teaching is always directed toward the stimulation, guidance, and reward of endeavors now in process or about to be undertaken. Thus supervision for creative teaching should emphasize activities to be undertaken rather than incidents that have passed. Hence, analyses of former shortcomings should be sparingly and tactfully made and then only as a step in planning better lessons to come.

Principle III. The integration of the teacher's personality is fundamental. Hence, a positive program of encouragement and the promotion of self-confidence must underlie all contacts between supervisor and teacher.

Principle IV. In its early stages supervision for creative teaching is usually directed to projects which are not unlike those which each teacher and class are now completing with reasonable success; it generally promotes minor innovations and capitalizes the successes which result, and thereby helps in the creation of confidence and readiness for more unusual and higher types of activities.

Principle V. Self-supervision is an inherent quality of the creative artist. To the degree that the creative supervisor is successful, his abler and more self-reliant teachers will progressively free themselves from the need of direct supervisory assis-

tance. Their further growth is best promoted by persuading them to accept a functional leadership among their colleagues.

Principle VI. Consciousness of the purposes of creative activity grows slowly and the skills and moods involved in creative teaching are complicated; both must develop progressively as successive practice, study, discussions, and conference ensue.

Principle VII. Advocacy of and support for creative teaching are potentially present among influential community groups and administrative officers. Whether or not such advocacy and support become actual depends upon the tactful persistence and resourcefulness of the supervisor, both in his personal efforts and in his direction of the campaign of education of the public through the instrumentalities of these teachers, fellow supervisors, and patrons who are already enthusiastic supporters of creative teaching.

Principle VIII. The creative teacher must receive the rewards for creative teaching. The supervisor should help the public to know such a teacher as the begetter of results, as an authority in his field. The supervisor should be content to receive such credit as may come to the competent guide, lest he seem to be appropriating to himself credit for results which were obtained through the interactions of teacher and pupils.

Whence Are Such Principles Derived?

It may be objected that such principles are merely subjective statements of opinion because they are not drawn from exhaustive studies of specific technics of supervision. It is believed that such an objection would not be valid. Guiding principles for human conduct are based on continued and diverse experiences in making adjustments and in helping others to do so. The principles just stated are derived by reflection upon the writer's successful experience as teacher, principal, superintendent, teacher-trainer, teacher of teachers, and head of a department of education in a university. Moreover, they have been read critically not only by the members of the yearbook committee of this department but also by other competent and experienced supervisors who have successfully stimulated, released, and capitalized teachers' creative energies.

To the degree that supervisors have successfully essayed creative supervision—intelligently undertaking the establishment of kindly human relationships with teachers, promoting co-operative attacks on school problems, and attaining thereby a creative release of teachers' talents—their behaviors will almost universally be found to conform to the eight principles enunciated above. If this is the case, it may reasonably be assumed that the principles are valid. In the yearbook, Mr. Chiles, Principal of the Harrison School of St. Louis, Missouri, has explained an authentic example of a relatively undramatic project in co-operative supervision indicating the manner and degree to which it exemplifies applications of the principles.

This discussion of principles of stimulating, releasing, and capitalizing the creative energies of teachers has premised the assumption that the supervisor himself must have a dynamic steering philosophy of education and of life. The principles as stated are not applicable by any supervisor who has not first created within himself a philosophy of life which conforms with them. Only as he has faith in the potentialities of every individual teacher, pupil, and parent to grow toward perfection, only as he feels sure that such growth is best promoted through democratic processes, and only as he has patience and resourcefulness and enthusiasm can he lead teachers to be creative agents of a democratic society.

CERTAIN PROBLEMS OF THE MACHINE AGE AND THEIR EDUCATIONAL IMPLICATIONS

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SINCE progressive educators are keenly interested at this time in the various facts of the present economic situation, both in their professional capacity and as private citizens, they will be interested in a brief explanation, in a non-technical manner, of four phases of the situation:

1. Present unemployment conditions in relation to so-called normal times.
2. Effects of the machine in typical industries.
3. Occupational shifts, or the rise and fall of typical occupations over a period of years.
4. The trade equipment of the worker.

Such a survey should give a general bird's-eye view of the problem, with a restoration of proportion and balance, both of which are sometimes endangered in the hysterical reactions prevalent in certain quarters today. Many worthy people at this time find themselves unable to perceive the forest because of the trees. Obviously, what is needed is a better perspective. Beyond contributing to such perspective, it is the aim of this article to point out the educational implications of the social and economic order we find ourselves a part of and indicate a few of the questions which we can confidently expect will be answered satisfactorily in the decades ahead of us.

Present Unemployment Conditions

Just at present there is a mass of theorizing being done on various angles of this whole question, but there is a dearth of actual facts and statistics upon which to base theories and solutions. The truth is there are no authentic figures available in the United States on unemployment, despite the attempts made in the census for 1890, 1900, 1910 and 1930 to obtain such information. Reliable estimates have been possible through local censuses, where a sample of the population is studied, through statistics from public employment offices and trade union reports. Until we have more complete data on the amount of part-time work in various industries, we must rely on estimates.

From the Census Office we learn that the 122,000,000 people in the United States are supported by 48,831,899 wage earners working about three-fourths of the time. The latest government figures on the number out of work is "between six and seven million." This means that about 14 per cent of those ready and willing to work cannot find jobs.

To those not informed as to average employment conditions, this seems a startling number. But as reliable data as we can procure would indicate that in reality there is always considerable unemployment.

TABLE I.*

ESTIMATE OF AVERAGE UNEMPLOYMENT—1897-1926

Group 1	
Manufacturing	Average 10 per cent
Transportation	Minimum 6 per cent
Mining	(Except war years)
Building Trades	
Group 2	
Public Utilities	Average 8 to 9 per cent
Retail Trade	Average 6 to 7 per cent
Domestic and Professional Service	
Public Service	

34,800,000 employed in above groups.

2,780,000 out of work on average.

At $1,500 annual earnings, loss in purchasing power would be four billions annually.

Paul H. Douglas, Professor of Economics at the University of Chicago, an accepted authority, after painstaking research draws the conclusions indicated in Table I as to the average situation for the past thirty years.

In periods of business depression, unemployment in Group 1 runs as high as 20 per cent. Those depressions, occurring in the cycles of six to eight years, present the gravest problems, as, for example:

1907—1908; 1914—1915; 1920—1921; 1929—1930.

Minor cycles occurred in 1911, 1924 and 1927. In normal times, some economists estimate that 15 per cent of the industrial wage earners of the country are unemployed. Each worker loses 14 per cent of his working time each year. Even in the prosperity years of 1917-18 more than a million of us were unemployed, according to these authorities.

The most irregular industries are: (1) the building trades, the workers are employed only 63 per cent of their time, or an average of 180 days per year; (2) clothing workers, who lose 31 per cent of their time; (3) shoemakers, who lose 35 per cent; (4) miners, who for the past thirty years have lost an average of ninety-three working days a year.

In prosperous America such facts as these have been until recently of little interest to any except the economist, the statistician, and the individual himself who is thus unemployed. In the minds of the general public the issue has been clouded by emphasis on daily and hourly earnings, whereas annual average earnings have the real significance.

In Table II is summarized the facts as to unemployment in various sections of the country in typical cities. In the first column are the results of the survey made by the Metropolitan Life Insurance Company, and in column two are the government figures. In general, these surveys show that 20 per cent of the workers were unemployed in these cities at the times indicated. While this figure is too high for the country as a whole, it is significant, and indicates that the estimates made by Professor Douglas are fairly accurate.

*The above table is based on statements found on page 32 of *The Problem of Unemployment*, Douglas and Director. Used by permission of The Macmillan Company, Publishers.

TABLE II.*

PER CENT OF UNEMPLOYED IN TYPICAL CITIES

City	*Metropolitan Life Ins. Co. Census, Dec. 1930*	*United States Census, Jan. 1930 (Class A)*
Birmingham	25.5	20.2
Buffalo	25.3	21.2
Cleveland	24.5	25.1
Denver	14.4	15.3
Detroit	30.2	25.5
Los Angeles	21.2	16.9
New Orleans	22.4	20.8
Philadelphia	24.9	23.8
Pittsburgh	24.5	21.5
St. Louis	23.6	20.1
San Francisco	17.6	12.3
Seattle	21.5	17.7

More than 20 per cent of gainful workers unemployed, January 1931.

Table III shows the comparative situation in California for June 1930, and June 1931. While there has been a decrease in both the number employed and the amount of payroll in each industry listed, a comparison with 1913, considered the economic normal year, would tell a different story.

You have read enough to impress you with the fact that unemployment is part and parcel of the modern industrial organization. It is not peculiar to any country or industry. It has many causes, including social, economic, political, and personal factors, and books have been written on each of these. It is not the purpose of this article to discuss unemployment *per se*, but only to draw out its implications for the educator, which we shall do a little later.

Effects of the Machine in Typical Industries

The second part of this discussion deals with evolutionary changes in industry, or the effect of the machine, and here we find ourselves on more familiar ground. The A. O. Smith plant in Milwaukee, where automobile frames are produced almost automatically, is an illustration, very highly developed, it is true, but symptomatic nevertheless of what is happening in every industry. Let us glance at some of the startling facts. No industry but has felt the onslaught of the machine. We have read in histories of the Industrial Revolution back in the latter part of the eighteenth century, but we today are witnessing an even greater industrial revolution, as a brief glance at typical industries will show.

The city dweller likes to think of the farm of his boyhood days, and is often astounded at the mechanization that has occurred in agriculture. Since 1910 the output has increased 28 per cent with the number of workers 6 per cent fewer. A tractor plows eight acres in the time required by a man and team to plow one acre. Mechanical combines in one wheat

*From *American Labor Legislation Review*, vol. 21, p. 205, June 1931.

TABLE III.*

EMPLOYMENT AND PAYROLLS IN CALIFORNIA
PER CENT OF DECREASE BETWEEN JUNE 1930 AND JUNE 1931

Employment index number (1925-27) 100

Industry	*Employment*	*Payroll*
Stone, clay and glass products	15.9	23.8
Metals, machinery and conveyances	21.2	30.6
Wood manufactures	21.2	30.5
Leather and rubber goods	6.9	8.3
Chemicals, oil, paints	24.9	32.8
Printing and paper goods	9.4	13.3
Textiles	6.3	13.4
Clothing, millinery and laundering	6.6	14.3
Foods, beverages and tobacco	17.4	24.7
Miscellaneous (including motion pictures)	12.7	15.5
All industries	18.9	26.1
Public utilities	9.8	12.9
Wholesale and retail	7.9	14.5

area alone have cut the force of farm laborers from 50,000 to 20,000. If produced forty-five years ago the 1930 wheat crop would have required 20,000,000 more harvest hands.

In the automobile industry 66 men out of every 100 have been displaced by machinery during the past sixteen years. In other words, two men out of every three that were required to fabricate a complete automobile in 1914 are now laid off. If the output per worker be taken as 100 in 1914, by 1925 it had grown to 310.

In the building industry we now have the steam shovel and loading crane. In making bricks one machine turns out 40,000 per hour as compared to 55 per hour by hand methods. In Ohio 11 per cent more square feet of finished building were erected in 1927 than in 1923 with 15 per cent fewer workers.

In mining electrified machinery has reduced the workers from 750,000 to 250,000.

In cigar-making all operations are now purely automatic, and one machine produces what 15 men used to.

Up to 1919 a man used to make 75 electric light bulbs a day. The next year an automatic machine was perfected which raised the production to 73,000 per day. Recent improvements have doubled this output.

In the baking industry we have the electric dough mixer and the wrapping machine. One attendant at the latter does what 20 workers used to do. A visit to a modern bakery will reveal large investments in machinery and a small force of employees.

Electricity is said to perform some 25,000 tasks for us.

But why continue? You are already familiar with these facts. In Table IV is a partial list of some other outstanding machines which are affecting or will affect industrial processes. A brief consideration of each machine named in this table will cause the reader to appreciate keenly the trend of the times.

*From *U. S. Monthly Labor Review*, p. 233, September 1931.

TABLE IV.
PARTIAL LIST OF LABOR-SAVING MACHINES

Dial telephones	Automatic glass bottle blower
Automatic stokers	Shoe-making machines
Bookkeeping machines	Teletypesetter
Paint sprayer	Multiplex, simplex, telephone teletype-writer
Automatic railway switch yards—power stations	Interest calculator
Knitting machines	Varityper
Mechanical cotton pickers	Coin-changing machines
"Canned" music in movies	

There is another way of arriving at an idea of the contribution made in our industrial processes, and that is by considering the increase in production per man-hour. Certain facts are summarized in Table V. In fact, economists assert that though there has been an 80 per cent increase in manufactured goods between 1907 and 1924, due to technological improvements, there has been at the same time a 45 per cent gain in output per worker.

Occupational Shifts

This statement of increased efficiency of the worker should be weighted with the fact that the total number of workers has been all the while increasing. During the past decade six million more workers have been gainfully employed in the country as a whole than before. The whole point of the discussion is that they have not been occupied at the same jobs as in former years. Adjustments have been necessary between the worker and the job. And that brings us logically to ask, what is the nature of these adjustments, these shifts in occupations? What occupations are on the up-grade, which on the decline?

Agriculture has been decreasing the number of its workers since 1910, manufacturing and railroading since 1920, and mining has remained stationary. In the past eight years the number of workers in these four industries has decreased by two and one-half million. There will be continued displacement of labor from industries connected with wheat, cotton, coal, corn, and mining, so economists tell us. There has been a noteworthy decrease in those employed in domestic service.

In Table VI are listed those occupations in which there have been increases during the years 1920 to 1927. Industries concerned with con-

TABLE V.*
INCREASE IN PRODUCTION PER MAN-HOUR IN 1927 OVER 1914

Industry	*Per Cent of Increase*	*Industry*	*Per Cent of Increase*
Rubber tires	292	Leather tanning	41
Automobiles	178	Paper and pulp	40
Petroleum refining	82	Cane sugar refining	33
Flour milling	59	Slaughtering and packing	26
Iron and steel	55	Boots and shoes	25
Cement	54		

*The table is taken from "Technological Unemployment," by Michael B. Scheler of Philadelphia, published in the *Annals of the American Academy of Political and Social Science*, 154, p. 24, March 1931.

struction and communication, with distribution and with personal service, as well as the professions, all these reveal an increase, according to figures released by the Department of Commerce. If we look at manufacturing alone, we see that there have been decreases in ship building, agricultural implements, sewing machines, notions, hair pins, combs, jewelry, and cigar boxes. We notice, however, that there has been an increase in the numbers employed in the manufacture of petroleum, automobiles, cast-iron pipe, pottery, baking, aircraft and aircraft parts. Undoubtedly a large factor in this rise and fall has been the shifts occurring in consumer demand.

Contemplate for a moment the effect on the cotton industry as a whole because of the development of synthetic fibres, like rayon, celanese, and silk and woolen combinations. Rest assured that the rise of silk and rayon means decadence for cotton and woolens, and unemployment, temporary at best, for an army of their workers. It means also a geographical shift for the industry, and an accompanying shift in residence for those workers who adjust themselves to operations in the new but similar industry.

TABLE VI.*

INCREASE IN NUMBER OF WORKERS—1920-1927

Industry	*Increase in Number*
Production, Transportation and Communication:	
Construction	100,000
Electric light and power	53,000
Telephone	78,000
Telegraph and cable	7,000
Distributive Industries:	
Automotive, including repairmen, chauffeurs, truck drivers	1,166,000
Radio	125,000
Electric refrigeration	20,000
Oil heating apparatus	10,000
Insurance agents	96,000
Mail-order houses	8,000
Motion pictures	150,000
Professional:	
Teachers and professors	185,000
Lawyers and judges	22,000
Clergymen	17,000
Physicians and surgeons	5,000
Dentists	25,000
Personal Service:	
Hotels and restaurants	525,000
Barbers, hairdressers and manicurists	169,000

To illustrate the point in still another way, there is a surplus today in wheat, corn and other farm products not only because of machinery and improved methods, not only because of the amount of acreage devoted to production, but also because you and I prefer to spend our money for automobile repairs, movies, life insurance, stocks, hotel accommodations, cosmetics, and the services of doctors, dentists, nurses, barbers, hairdressers, and teachers.

*United States Department of Commerce.

The use of the automobile, by decreasing walking decreased the demand for shoes and for bread. While men found work in the factories making automobiles, other men lost their jobs in shoe factories and on wheat farms.

Unemployment due to such causes as the replacement of the worker by machines, scientific methods of industrial management, and mergers has come to be known as technological unemployment. The curve of production is a rising one: there is more work to be done because there are more of us, and because each of us enlarges his consumption. But it does not follow that increased production means more employment; it would if the new work were done in the old ways. This whole matter of technological unemployment is but a part of the larger problem of occupational obsolescence, or the falling into disuse of trades. The trade of blacksmith has ceased to be of value. So has that of carriage maker because of the invention of the automobile. Sometimes physical changes cause an occupation to fall into disuse, as when Milwaukee began to get its water supply from Lake Michigan instead of from wells. Seasonal and cyclical fluctuations in industry must be considered as contributing to this problem of obsolescence, because the worker cannot wait until his old job opens up for him again; he must adjust himself immediately in order to remain self-supporting. Insufficient training is another factor contributing to obsolescence in industry, for the operators of special machines or those handling minute divisions of processes soon become victims of their over-specialization. They get "job-set," if you please, and are incapable of making the minor adjustments which should be made without serious loss to the industry, the worker, or society as a whole. The social hazards of over-specialization weigh down heavily upon us.

The Trade Equipment of the Worker

And this brings us to the final and fourth topic: What about the trade equipment of the worker?

The narrow qualification of knowledge of a single process or of one type of machine carries with it the penalty of lay-off when a decline occurs. And more than that, the period of unemployment is likely to be longer than for the all-around craftsman who may also feel unemployment periodically.

Let me quote a few authoritative statements on this point and its educational implications. The first is from a study, "Lay-off and Its Prevention," issued in 1930 by the National Industrial Conference Board:

> This limited type of craft skill, the sole equipment possessed by an increasing number of workers as a subsidiary result of basic changes in methods of operations, is likely to be a factor of growing importance in the labor situations, influencing the amount and character of lay-offs and the extent of unemployment.

The implication here is very strong that one method of attack on the problem would be better training for the worker and continual avenues for retraining.

Here is a very plain statement by Roger Babson:

> Workers displaced by technological changes need special employment counsel and the assistance of vocational training opportunities in order to adapt their abilities to new work without loss of income or lowering of standards of living.

William Green, before the United States Senate Committee in 1930, said:

> During the period a man is out of work provide schools for adult education which he can attend. Our present school buildings would offer temporary facilities at night for this, together with special industrial schools where he could improve himself in his trade or perhap learn one. In brief, instead of wasting the time of the unemployed, let them use this period of idleness in preparing themselves for the future.

In other words, this problem of unemployment and obsolescence in occupations is not only the problem of the individual worker, or of the particular employer or industry involved. It is not something that labor organizations can solve. It is a problem of society as a whole. One solution you hear advanced frequently at this time is a shorter working week. This will help, but it is not sufficient. The government should institute research to anticipate changes, it should assist in the regularization of industry, but especially it should aid the development of vocational education.

The worker must be educated from the beginning to appreciate the need for continued study if adjustment is to be effective in dynamic industry. Vocational education, therefore, must be sufficiently flexible to allow for comparatively rapid retraining. Where specific vocational training is given it must leave the worker plastic. An experimental, constructive attitude should be developed. It is not so important to teach the exact processes now in use in shop and factory. These specific skills can best be acquired during employment. A basic foundation in a given field is what the worker needs, a scientific attitude of open-mindedness and thoughtful analysis. Thus equipped, he will weather many a shift in operations and processes in his field, and should the whole field become obsolescent, he will be the first to sense the need for retraining. Man is not so constituted that he can do one thing only. Even with years of habituation to a simple process, the worker never loses the capacity for retraining.

In the past the worker's mental set against change, against transfer from one operation to another, has been a great drawback. This attitude must be eliminated; otherwise there is little possibility of relief from insecurity from industrial change.

Those of us in vocational education must be able and ready with concrete information on those industries that are expanding, their rate of growth, their relative wage scales, their geographical centers, and ways in which new workers can be absorbed in them. We must discover and point out to workers other lines of work for which their previous training has best fitted them. What can the shoe worker do? the cotton operative? the farmer? This work of reorientation is one of the normal functions of trade schools.

At this point I can do nothing better than call your attention to the accompanying summary in Chart No. I, for the inspiration of which I am largely indebted to Dean William F. Russell of the Teachers College, Columbia University. In the article cited he pleads for the substitution of

CHART No. I.*

EPOCHS IN SOCIAL AND INDUSTRIAL PROGRESS AND THEIR EDUCATIONAL IMPLICATIONS

	Tools and Power	*Employment Conditions*	*Economic Contributions of Women*	*Unit of Control*	*Standards of Living*	*Tempo and Attitude*
Prior to the Industrial Age.	Stone, metals, pottery, bronze. Muscles, leverages, water, fire.	Employment for all. Free land. Anyone who wants to work can get a job.	Work a family enterprise.	Family a small community, relatively self-sufficient. Personal initiative. Independence of individual city states	Simple standards.	Leisurely tempo. Long hours, low productivity. Conservative attitude.
The beginnings of Industrialism.	Iron, steel, steam.	Technological unemployment. Employment for those who can get it. Differentiation of processes. Decay of old apprenticeship.	Factory labor of women and children.	Increasing interdependence. Trade and tariffs. Acute nationalism. Beginnings of social legislation.	Low standards. Poverty among workers.	Increasing tempo. Long hours, increased productivity. Reactionary attitude.
The present cataclysm.	Synthesis. Atoms.	All the workers idle some of the time. Some of the workers idle all of the time.	More than one wage-earner per family.	Almost complete interdependence. Free trade. Increasing governmental control. Internationalism.	Higher standards of living. Extravagant waste of natural resources.	Quick tempo. Short hours, high productivity. Periodic shut-downs. Radical and progressive attitude.
Educational implications.	Importance of scientific attitude. Continuing adult education necessary.	Greater importance of general and prevocational education. Vocational education must not be too narrow. Thrift education necessary.	Importance of vocational education for girls and women.	Importance of social studies— a. Leagues of States. b. World Empire. Development of ability to work with others. Job ethics. Vocational guidance.	Study of spending and saving. Luxuries vs. necessities.	Importance of study of use of leisure. Hygiene problems, mental and physical. Social point of view. Attitude of creative experimentation.

*Acknowledgments to Wm. F. Russell, Columbia University. See article "The Closed Frontier," in Journal of Adult Education, June, 1931.

a new frontier in terms of a chance at a new job, for the opportunity open to men old and young in former days of packing into the covered wagon their household effects and setting out on a thrilling journey beyond the frontier to free land in the West. The new job, with its obstacles to be overcome and its equality of opportunity will do for men of today what the "Westward, ho!" movement of our forefathers did for them. "Bad times," says Dean Russell, "should be busy times in education."

The meaning for the educator is plain. Adult and vocational education must be readily available and must be a continuous process. It is better to give grants in aid of re-education than doles and unemployment insurance. The number of persons in the United States between 16 and 64 years of age is seventy-five million. Ninety per cent of the men and 25 per cent of the women between these ages are working for wages and salaries. When the day comes that we are spending twice as much money and brains in the continuing education of this great group, that day we shall begin to see the way out of the present dilemma. There must be a vocational heart to the entire educational process. The trade school of the coming era will discard training in specific operations, and specific skills, but will generalize apprenticeship with machines in preparation for entrance into a given field, instead of confining knowledge and ease in handling to any one set of them.

It is slowly dawning on many unemployed today that retraining is the answer; if not, a gap of greater or less length between jobs ensues. There is a gradual and unwilling readjustment to new conditions of skilled work, or failing that, a despairing acceptance of reduction to the unskilled level.

A new emphasis is given thrift education, the wise spending of money, the social studies, the proper use of leisure, and job ethics. Vocational guidance and the vocational education of girls and women must both receive more attention.

Those in vocational education have been heard to state that apprenticeship is a thing of the past. And this is true if by apprenticeship we mean the binding of apprentice to master. But I wonder if there is not dawning a new era of apprenticeship in the swing of the pendulum away from narrow specializations? Neither is skill as such entirely in the discard. No less an industrialist and entrepeneur than C. S. Renold weighs the problem in "The Nature and Present Position of Skill in Industry." The Renold Company are makers of industrial chains and conveyers, Manchester, England. Mr. Renold studied the place of skill in his plant for seventeen years, and makes the following assertion:

> We have carried perhaps as far as any firm in England, the process of distillation of skill and specialization of management functions . . . all steps have been designed to replace skill by machinery or to subdivide complex skills into simple ones . . . and yet the ratio of skilled employees has remained practically constant: in a plant of 1500 workers it is slightly more than 1 to 3.

It is conceded that the designing and making of the new machines and tools require a high degree of expertness, and so does the operation of some of the new machines. Moreover, for the individual worker at the

machine, the skill required in adjusting to the material and complex methods of processing is usually of a higher order than the old time "hand skill." In fact, this is true of every level in industry up to and including the engineers.

In conclusion, let me quote an invigorating paragraph from the great historian-economist, Charles Austin Beard:

> One of the many reasons why men and women have such a bitter struggle for a livelihood even under the most favorable conditions, is their ignorance of modern society and its opportunities and their lack of training in the fundamentals of any calling whatever. The art of picking up enough "to get by with" is a great American art that is responsible for some facile successes and numerous disasters. The very first to suffer from unemployment are generally those who have never had a basic education in anything. . . . Adult education cannot solve the problem of unemployment, technological or otherwise . . . but its function is to make continuously available to all inquisitive adults a realistic knowledge of what is going on in the world—the kind of knowledge that furnishes a shield and a sword in the struggle for existence.

Alas, we educators may ourselves be slow to recognize the hand-writing on the wall. In days gone by we have been known to lack appreciation of the challenge of a new social order.

May I ask, which will you have for your countrymen, able and willing to work, a park bench, or a school bench?

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THE ADMINISTRATION OF SUBJECT A AT THE UNIVERSITY OF CALIFORNIA

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These articles are based on a dissertation entitled, "The Administration of Subject A at the University of California," submitted by the author in May, 1931, which further formed the basis of a report to the administration of the University on this problem. Titles I and II were published in the January number of THE QUARTERLY. *Titles III and IV, herein published, complete the series of articles.*—EDITOR'S NOTE.

III. THE EFFECTIVENESS OF THE REMEDIAL COURSE IN SUBJECT A AT THE UNIVERSITY OF CALIFORNIA

THE first step taken by the Department of Subject A is that of selection by means of the Subject A examinations. Next, and undoubtedly more important, is the remedial class work required of those who do not pass the entrance English tests. An important phase of our study was that which attempted to evaluate this remedial program.

Initial and final tests, Forms II and III, respectively, of the Barrett-Ryan English Test, were administered to twelve sections of Subject A in the fall semester, 1930. Norms based on 13,233 cases in 68 colleges were available for purposes of comparison. The initial test scores were segregated by decile ranges. The mean scores were computed for each group and the average improvement after twelve weeks noted. The improvement from the initial to the final test was interpreted in terms of raw scores as well as in terms of percentiles. Table I shows the results in terms of raw scores. As expected, the gains in the upper levels were less impressive than in the lower ranges. Students near the top at first had, of course, reached the point where there was less opportunity for improvement. Moreover, the units of score are probably unequal as one ascends the scale of points. The improvement in terms of percentiles is shown in Table II. We note here results similar to the above, with the impressive gain of 47 percentiles for the lowest group.

The norms of the Barrett-Ryan Test set the median score at 96.5. Reference to Table I reveals some interesting comparisons. The initial median score of the 294 students was 102.3 (mean—101.0) while the final median score was 118.0 (mean—116.5). These data indicate that ***even the failures in the Subject A examination were superior to the median of 13,233 college freshmen in the 68 colleges in which the norms were derived.*** The gain from the initial to the final tests is approximately one standard deviation, revealing highly satisfactory results. The gains by class sections are shown in Table III. The same tendency is apparent here.

It should be pointed out that not all of the improvement can be attributed to the instruction in the course in Subject A. We would expect the average college student to make some improvement, directly and indirectly, through his other courses. This factor, however, can be overemphasized,

since a few studies have shown that there is little improvement from the freshman to the senior year of college. The practice effect must also be accounted for, but it probably would amount to less than 2 per cent.

The initial test discriminated sharply between the superior students excused at mid-term and the failures in the course in Subject A, the median scores of the two groups being respectively 114.0 and 91.0 (a difference of approximately 1.5 Standard Deviations). The distributions of scores are shown in Tables IV and V.

By way of summary we may say that the instruction in Subject A resulted in marked improvement in students' performances on tests of the mechanics of the English language, the gain being approximately one standard deviation for the group studied. Allowances for practice effect and other factors would not materially alter this conclusion.

There is considerable evidence that the standards at the University of California are somewhat higher than those of the colleges in which the test norms were derived. Even the failures in the Subject A examination scored above the median of a large group of freshmen in 68 other colleges.

TABLE I.
IMPROVEMENT MADE BY 294 STUDENTS IN THE COURSE IN SUBJECT A

Percentile Range on Initial Test in September	*Mean Score on Initial Test*	*Mean Score on Final Test*	*Gain*
91-100	118.8	127.1	8.3
81-90	111.8	123.1	11.3
71-80	108.0	122.7	14.7
61-70	105.9	119.5	13.6
51-60	103.0	118.0	15.0
41-50	100-5	114.9	14.4
31-40	98.0	114.7	16.7
21-30	94.0	113.2	19.2
11-20	90.0	109.6	19.6
1-10	79.8	102.4	22.6
The group as a whole	101.0	116.5	15.5

TABLE II.
PERCENTILE GAINS MADE BY 294 STUDENTS IN THE COURSE IN SUBJECT A, BASED ON THE NORMS OF THE BARRETT-RYAN TEST

Percentile Rank on Initial Test in September	*Mean Percentile Score on Initial Test*	*Mean Percentile Score on Final Test*	*Gain in Percentile Score*
91-100	90	97	7
81-90	80	94	14
71-80	75	93	18
61-70	70	91	21
51-60	66	90	24
41-50	60	85	25
31-40	55	85	30
21-30	45	83	38
11-20	35	77	42
1-10	17	64	47
The group as a whole	60	86	26

TABLE III.
INITIAL AND FINAL TEST SCORES OF TWELVE SECTIONS IN SUBJECT A

Section	*Median Score Initial Test*	*Median Score Final Test*	*Gain*
I	102.9	117.7	14.8
II	100.4	115.5	15.1
III	103.0	121.0	18.0
IV	101.0	118.5	17.5
V	106.0	121.0	15.0
VI	104.3	116.0	11.7
VII	102.1	116.5	14.4
VIII	100.4	117.5	17.1
IX	102.7	119.3	16.6
X	101.8	118.5	16.7
XI	97.7	116.7	19.0
XII	102.7	118.5	15.8
I—XII	102.3	118.0	15.7

TABLE IV.
INITIAL TEST SCORES OF STUDENTS IN SUBJECT A WHO WERE EXCUSED AT THE MID-TERM

Score	*Frequency*	*Score*	*Frequency*
97	1	114	1
100	1	115	2
102	1	116	1
105	1	117	2
106	1	118	2
107	1	119	2
108	1	120	2
109	2	122	1
111	2	123	1
112	2	126	1
113	2	127	1
Median=114			
(Norm=96.5)			N=31

TABLE V.
INITIAL TEST SCORES OF STUDENTS IN SUBJECT A WHO FAILED THE COURSE

Score	*Frequency*	*Score*	*Frequency*
46	1	91	3
49	1	92	1
64	1	93	2
67	1	94	1
72	1	95	1
77	1	96	1
81	1	97	2
85	3	103	1
86	1	107	1
87	2	112	1
88	1	117	1
90	1	130	1
Median=91			
(Norm=96.5)			N=31

IV. SUGGESTED REORGANIZATION OF SUBJECT A

The author's study of Subject A reported in three previous articles in this magazine led to a number of recommendations for reorganization. It is the purpose of this article to set forth briefly the more important of these suggestions.

In the first place there appears to be a need for closer co-operation between the University of California and the high schools of the State. The University should take steps to set up definite standards in English composition and make these available to high school English teachers. Everything is to be gained by such an arrangement. High school teachers feel keenly the responsibility of preparing their students to pass the Subject A examination. Teachers' aims and methods may in some cases be extremely narrow under present conditions. The idea of coaching for a test can easily be conceived of as occupying the center of the stage and crowding out other worthwhile objectives. Since our study did not take up this phase of the problem we have no objective evidence that the conditions here mentioned are widespread. It would appear, however, that much good could come from a more general understanding on this important question of standards.

Secondly, the testing program should be improved. A clearer definition of purpose would make possible the construction of more accurate measuring instruments. In line with our first recommendation, there is need for a clearer understanding of what constitutes good English usage. A majority of a group of linguists approved such expressions as the following:[1]

It *behooves* them to take action at once.
I *had rather* go at once.
None of them *are* here.
This was the *reason why* he went home.
We will *try and* get it.
The room is *awfully* cold.
It is *me.*
I *guess* I'll go to lunch.
I *can't seem* to get this problem right.

If, despite such approval, students are forbidden to write English of this kind, there will naturally be a conflict between standards in what is read in popular books and what one is required to use in his own writing. The meaning of the term "acceptable English" should be agreed upon.

In the future the Subject A examination should consist of both the essay and the objective tests. The essay should not be judged from the standpoint of correct English in general so much as from the standpoint of specific, clearly defined functions, ignoring those functions which are more accurately measured by the objective test. The mechanics of the English language doubtless are more accurately measured by the latter. The ability to express one's thoughts is probably best judged by the essay. A student, for example, who is writing a composition is at liberty to select

[1]Lyman, R. L., "Summary of Investigators Relating to Grammar, Language, and Composition," *Supplementary Educational Monograph No. 36,* January 1929, pp. 80-81, University of Chicago, School of Education.

his words in such a way as to avoid those he cannot spell correctly. In the objective test it is possible to select words for the student and to determine whether he knows how to spell them.

The third recommendation is that there should be a more conscious attempt at adapting the instruction in Subject A to the needs of the students. The relatively large per cent of foreign students found at the University presents a problem in this respect. Undoubtedly, specialized work could be devised and presented in such a way as to result in greater improvement among such students. It should be possible to reduce the mechanical errors to a few categories and to provide special drills for all types of students. Vaughan's study has emphasized this point.[2]

Lastly, a program of continued study and experimentation should be worked out by the University. Some attempt should be made to revolutionize the field of grammar and composition to the extent that the subject of reading has been reorganized. A few lines along which further investigation might profitably be directed are: (1) The extent of persistence of ability developed in a course such as Subject A. One or two studies have cast some doubt upon the feasibility of attempting to make permanent changes in the writing ability of mature students like college freshmen. If this is true, our efforts would have to be directed toward improvement in the elementary and secondary levels. (2) Continued study in the field of the high school curriculum is necessary to determine what is the best preparation in English. It is possible that improvement in *content* and *method* might yield better results than increasing the *amount*. (3) A study should be made of the adequacy of the training program for high school English teachers. It may be that literature tends to monopolize the study program at the expense of language work, composition, grammar, speech, etc. The needs of the job might prove to be a better criterion than the professors' opinions and preferences in setting up a curriculum for training English teachers. (4) Experimentation should be carried on to determine the desirability of sectioning classes in English according to ability shown on the Subject A examination. (5) An effort should be made to enlist the co-operation of other colleges and universities of the State. A pooling of efforts would tend toward standardization and make it possible for the high school English teacher to attain a definite goal for her college preparatory group.

[2]Vaughn, W. E., "Articulation in English between High School and College," *Teachers College Contributions to Education*, No. 370, 1929, p. 43.

DISCRIMINATION IN HEALTH TEACHING*

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THAT health is a vital factor in education need hardly be expounded before this audience. It might well be argued before those who are not here. Therefore, we shall be concerned here, within the family circle as it were, merely with an examination of this quality of vitality in the school health movement, its origins and rapid increase, the dangers of too rapid growth, its probable future directions and your relation to it all as teachers. We shall try to clarify certain confusions which seem to exist concerning what to teach and what not to teach about health, and discuss certain fundamentals, an understanding of which is very necessary to the fine discrimination which must be exercised in determining the factual content of health teaching.

Newness of Public Health. As we contemplate the present-day public health movement, it is hard to realize that this is one of the youngest of our movements for social betterment. In spite of great national health organizations, beneficent health foundations, the increasing dignity and importance of health departments, the rapid erection of more beautiful and more adequate health edifices such as the health center and special health school, in spite of all these material evidences that health promotion and protection is a growing, vital factor in our social structure—still it is an infant among the social sciences, a nomadic child prodigy of medicine, and until very recently a nameless foundling of education.

Only eighty years ago disease prevention and health promotion in the modern sense were non-existent. The middle of the last century[1] marked the beginnings of the modern public health movement. James Harvey Robinson says that were the complete history of mankind to be written in a 300-page book, the history of public health would occupy but the last three or four lines of the last page.

Newness of School Health. Even more recent has been the development of the school health program. Health appears to have been accorded little interest by the National Education Association until recently. To be sure, certain papers under the title of school hygiene and physical education were delivered as early as 1869, but if one may judge from their number and their titles[2] they hardly constituted a vital factor in education.

It would seem to an outsider that health became a vital factor in education soon after the American Child Health Association, under the executive secretaryship of Miss Sally Lucas Jean, formulated the "Eight Rules of

*An address delivered before the Health Section of the Teachers Institute at the annual meeting of the California Teachers Association, Bay Section, December 23, 1931.

[1]Winslow, C.-E. A., "The Evolution and Significance of the Modern Public Health Campaign," Yale Press, New Haven, 1923; p. 21.

[2]Fiftieth Anniversary Volume, National Education Association, 1906, p. 641, and National Education Association Proceedings, 1906-20.

Health." Here for the first time the hitherto nebulous child health propaganda was reduced to simple, if somewhat dogmatic, language which the teacher could understand.

School Health's Rapid Growth. Whether because of this, or because the time was ripe, in the few years that have followed the school health movement has grown by leaps and bounds. It has taken the schools by storm, has aroused the interest of teachers and school administrators alike. It has fired the imagination of mothers' groups and stimulated boards of education. Of late, even chambers of commerce throughout the country have shown active concern with their school and municipal health status. The report of your Commission on the Reorganization of Secondary Education in 1918, which named health as the first objective in education, was a momentous dictum. It marked another milestone of progress in both the school health and the larger public health movement. Health education has apparently become a specialty in the field of education, and universities are preparing health education supervisors to guide and assist teachers with this important, newly recognized, vital factor in education. Courses of study are being compiled by state boards of education and the dearth of source material is rapidly being remedied by authors, foundations, and various privately endowed research bodies. Health teaching has been found not to concern only the physical education and the science teacher, but to permeate all of teaching, having a proper place in English, geography, dramatics, and even mathematics.

The amazing development of the school health movement is clearly portrayed in the report of Dr. James F. Rogers, entitled, "School Health Activities in 1930."[3] This is compared with a similar study made in 1923.[4] In these seven years expenditures for school health work have increased 10 per cent; for medical and dental service, 15 cents per pupil; for physical education 32 cents per pupil. The presence of parents during physical examinations is a recent refinement hardly thought of in 1923, but in 1929 nine cities of the first class reported 50 per cent or more of parents present. A "summer round-up" was unknown in 1923, but in 1930, 30 per cent of the largest cities, 50 per cent of the medium sized, and 33 per cent of the smaller cities reported the examination of children before entrance. Forty-five per cent of 1,003 superintendents report the employment of a full- or part-time physician, and 63 per cent have a full- or part-time nurse. Children are weighed and measured periodically in about 90 per cent of schools, and health education is carried on in 97 per cent of the districts represented. Five per cent of superintendents report employment of this newest necessity of health education, "a special health supervisor." The report discusses at length the scientific progress made in the field of health education, and states "there has been an awakening to the needs for health teaching in the secondary schools where . . . health instruction has been very much neglected."

[3]Rogers, J. F., "School Health Activities in 1930," U. S. Department of the Interior, Office of Education, Washington, D. C., Pamphlet No. 21, May, 1931.

[4]Ready, Marie M., and Rogers, J. F., *Biennial Survey of Education in the United States*, 1928-30, Chapter X, "Hygiene and Physical Education," United States Department of Interior, Office of Education, Washington, D. C., Bulletin, 1931, No. 20.

A Phenomenon of Social Progress. Those here today, then, have witnessed a remarkable phenomenon of rapid progress in social welfare. This phenomenon has resulted, first, from important scientific discoveries in the field of preventive medicine; second, from equally important improvements in teaching objectives and methods; and, third, from an interesting facility of interchange between the two professions of medicine and education. It is this interchange which provokes our interest. Upon it depends the much-needed further development of sound health teaching. Upon it we shall have to depend largely for application of newly discovered methods of prolonging life and improving health. We cannot utilize medical discoveries of importance to well people, so long as familiarity with these discoveries remains cloistered in the laboratories, confined to the minds of our scientists, or described only in technical terms within the confines of learned societies.

The Interchange Between Medicine and Education. There must always be those among the scientists who are willing to take time from their absorbing tasks to discuss their findings in non-technical language with teachers. There must always be teachers who will reserve time and energy to grasp the meaning of these labored discussions and pass them on in still more generally understood terms to their colleagues. These colleagues must in turn be resourceful enough to apply these findings to their particular educational problems. Such applications must always be subject to review by the scientists, who may hold up their hands in horror at the distortion of their brain-child which has resulted. The applications, or teaching materials, as you would now call them, must then be revised to meet the rigid dictates of science. By the time this is done the original discovery may have been disproven or revised, and the entire procedure commences anew.

Safeguarding the Interchange. It seems a long, discouraging process. It is one fraught with the dangerous pitfalls of misunderstanding, despair, and abandonment. But it is a process which has worked with remarkable success as attested by the development of the school health program. It is one which will have to continue and in which the pitfalls, if recognized, can be avoided.

Aids for Mutual Understanding Between Medicine and Education

The Teacher's Viewpoint. Misunderstanding threatens to arise between the teaching and medical professions because of the pressure on medicine for more facts for health teaching and more results from health service. State Superintendent Kersey recently presented the teacher's viewpoint to the Health Officers Section, League of California Municipalities. It was an encouraging and inspiring message to the health officer. It impressed him with his responsibility to co-operate with teachers. It indicated an unsatisfied desire on the part of educators for more health facts to teach and better health service with which to motivate their teaching. It will go far toward preventing misunderstanding between health officers and teachers. May I now present briefly the health officer's viewpoint so that misunderstanding and impatience on the part of the teacher may be further avoided, and in the hope that it may aid the teacher to exercise that important discrimination so necessary in her health teaching.

The Health Officer's Viewpoint:

1. *Traditional Peculiarities in Acquirement of Health Knowledge.* In the first place, it must be borne in mind that there are traditional peculiarities in the manner by which the average person acquires health knowledge. This applies to teachers as well as pupils, and must be avoided with all the effort and persistence which is always required to break a tradition. Say what you please, health knowledge is most frequently obtained by the average person through hearsay. Financial advice is usually sought from bankers, legal advice from lawyers, religious advice from ministers, automobile advice from mechanics, but medical advice is first and most commonly sought from the neighbors. More neighbors have prescribed for the baby's colic, the schoolboy's cold, the housewife's backache, the husband's cough, than all the doctors put together. The readiness with which lay-people volunteer health advice is amazing. It is usually unsound. Even cautious people, who would not think of venturing an opinion on financial or legal matters, throw prudence to the winds and become almost fanatical zealots when it comes to health advice. The direct results are an astounding display of medical superstitions and ignorance which continue generation after generation to take a large toll of human lives. The baby's inflamed appendix continues to be fatal because it was burst by following the neighbor's advice and giving castor oil for "colic." Diphtheria, a preventable and curable disease, continues to take nearly ten thousand child-lives a year partly because the neighbor advises a red-flannel and onion poultice for the child's "cold." Mothers continue to jeopardize their decreasing chances of escaping cancer of the reproductive organs because the neighbors continue to recommend a patent medicine for "female trouble." The tuberculosis sanatoriums continue to be over-crowded with wage earners in the advanced and less curable stages of the disease because the neighbors continue to advocate proprietary cough syrups. If proof of this point is needed, the teacher need only ask pupils to bring to school a list of remedies commonly employed at home. She may do well to look over her own medicine chest. Compare these with any standard list of approved household remedies and charge the difference to the peculiar human trait of clinging to tradition—a trait not to be dismissed lightly, for it accounts for untold lives.

   Therefore, the physician and health officer would urge careful discrimination upon the teacher that she may be sure she is teaching the scientific truth as we know it today, not tradition from her own family, superstition gleaned from her neighbors, or plain untruths gathered unconsciously from magazines.

2. *Dangers of Fallacious Reasoning.* The second point to bear in mind is that in perhaps no other field of scientific endeavor are we so exposed to the danger *"post hoc propter hoc"* reasoning as in medicine. The sufferer, given a pill and being shortly relieved, reasons "after this, therefore that," and is most persistent in his conviction that the pill did it. In fact, he often convinces his doctor with the result that many others get the same pill. Both patient and physician lose sight of the fact that the sufferer may have been afflicted with a self-limited ailment which would have improved anyway, or that some other factor, such as correction in diet, improved elimination or additional rest was really responsible for the cure.

   I once had opportunity to treat colds to the extent of several score a day in a university students' health service. Army physicians had just announced what seemed excellent success in treating colds with dilute chlorine gas. Their theory and supporting observations seemed so sound that we immediately installed chlorine tanks and a mixing apparatus by means of which students with colds could sit in a "chlorine room" for an hour at a time, bringing their books with them, and sitting in comfortable study chairs while undergoing the treatment. The room could accommodate eight students at one time and was easily kept filled twelve to fourteen hours a day. It was spectacular and new and soon became famous among the students. While it was apparent from the

start that it was not a "hundred per cent cure," still those cured or benefited seemed far to outnumber those noting no improvement. In fact the cured ones were exuberant in their praise, and at the end of two months many of us were convinced that we had the long looked-for cure for colds.

Fortunately for us, however, our superiors had arranged a "control experiment," whereby a number equal to those taking the chlorine treatment were treated by the ordinary methods. At the end of the school year we had treated over a thousand in each series and were under the impression that chlorine had cured at least 75 per cent. Careful comparison with the control series, in which we tabulated the type of cold, days duration before and after treatment, days of total and partial disability, resulting complications and sequelæ, showed, however, that our new treatment was no better than old methods. Thus by applying rigid scientific procedure we escaped *post hoc propter hoc* reasoning and avoided troubling teachers with a new and cimplicated method of stopping colds.

Physicians are but human, and no one wishes more than they to find new and improved methods of relieving and preventing suffering. Sometimes we make mistakes honestly but unwittingly. Sometimes a reporter will find us in a garrulous mood and our hopes and fears for certain experiments are forced from us. Immediately our fears are attributed to annoying conservatism and our hopes are broadcast and accepted as facts. When the bubble bursts the public lose faith and proclaim they will never again believe a thing they read in the papers. It is to be hoped that this irremediable situation will not cause misunderstanding or lack of faith in the school health movement. There will always be abundant facts to teach, about which there can be no doubt.

Personal experience, even though it generates fallacious reasoning, will always tend to overpower the cold, impersonal, laboriously gathered facts of science. It will continue to generate new superstitions which must be combated by teaching discrimination and clear thinking. Some superstitions will be found to contain a modicum of truth. For instance, the present valuable use of digitalis for certain heart conditions is traceable to a superstition that a supposed witch in England could cure heart-trouble with herb-tea. While she was killing many in whom the drug was contra-indicated, and curing a few who happened to have the particular defect of the heart muscle in which it is needed, it gradually developed that her herbs contained foxglove, and its use finally became standardized in medicine. We can now see a possible grain of truth in the superstition that warts can be cured by rubbing with a cinder. Some dermatologists have recently developed the theory that certain types of warts are infectious and that they are spread from a "grandfather wart," usually the oldest and largest. If this grandfather wart can be destroyed by drugs or the electric needle the absorption of its break-down products into the blood stream produces an immunity that destroys the grandchildren warts and prevents for a time the formation of others. There is no reason a cinder should not be used except that it is unnecessarily painful and increases the danger of infection and blood-poisoning.

Teachers, like scientists, must avoid the dangers of fallacious reasoning as they would avoid a plague. The teacher must not fail to discriminate most carefully in what she herself believes concerning health and to demonstrate that discrimination by what she gives her pupils. Such failure can never be excused by lack of facts to teach, firm conviction through personal experience, the small modicum of truth in a very few health superstitions, or a natural susceptibility to newspaper stories and magazine ads.

3. *Technical Terminology and Scientific Method Result in Dogma.* There is another factor which contributes to the danger of misunderstanding, not so much of the medical profession, but of what is said by them. This is the inevitable result of the development of a technical terminology. Perhaps no professions have developed a more forbidding or bewildering language than

the sciences allied with medicine. As an illustration compare the titles of scientific papers contained in recent issues of the *Journal of the American Medical Association* with those of the pseudo-scientific writers described by David Starr Jordan in his classical treatise on Sciosophy[5].*

Journal of the American Medical Association	Sciosophy
The Etiology of Multiple Sclerosis.	Posthumous Humanity, A Study of Phantoms.
Hereditary Juvenile Glaucoma Simplex.	Thobbing.
Neuropsychiatric Counterfeits of Organic Visceral Disease.	The Upper Tread of Atma-Buddhi-Manas.
Grippal Infections.	Chasm between Odic and Chemical Sensitiveness.
The Hypophyseal-Ovarian Relationship.	Horrors of the Presence.
The Effect of Hypophysectomy on Ovulation and Corpus Luteum Formation in the Rabbit.	The Hidden Meanings of Elasticity.
Slipping of the Upper Femoral Epiphysis.	Occult Physik, or the Three Principles of Nature Antagonized by a Philosophical Operation.

No doubt the discriminating reader would look askance at the titles of sciosophy, but unless he were a highly specialized research worker, he would regard with aversion many of the titles in the *Journal of the American Medical Association*. To the undiscriminating reader both the titles and content of the papers of sciosophy would be just as easily read and probably more easily understood than the titles and papers of medicine.

Still another factor combines with technical terminology to affect the teacher adversely. This is the confusing complexity of the scientific method.

Scientific conclusions are reached only after long and laborious work of such painstaking character that its mere contemplation would discourage most of us. In the field of nutrition, for instance, until very recently vitamins could only be studied through their effect on the growing animal body. They were not susceptible of chemical demonstration, their molecular structure was unknown, their presence or absence in food substances could only be discerned by time-consuming feeding of laboratory animals and carefully checking the growth curves and symptoms of deficiency disease which may develop. Such work must always be done in multiple series with a control group of equal size. Frequently months elapse before results can be looked for, and then too often are negative. Oftener there is some evidence of positive results, but the entire experiment must be repeated several times to make doubly sure. Results obtained must be described to colleagues with detailed accounts of exacting technics. If no one else can confirm them, the conclusions remain unverified and are not accepted. The experimenter may then consider the alternative of abandonment or repetition, knowing he will have a more difficult time to interest colleagues in attempting to verify his work a second time.

A case in point[6] is a recent painstaking series of experiments attempting to measure the effects of pasteurization on the vitamin content of milk. The investigators spent months feeding one series of young animals on pasteurized milk and a similar series on raw milk. Accurate records of growth were kept and evidences of deficiency of Vitamin C were carefully watched for and recorded. They concluded that pasteurization did destroy some of the Vitamin

[5]Jordan, David Starr, *The Higher Foolishness*, Bobbs-Merrill Co., Indianapolis, 1927.

*Note.—Those unacquainted with the mysteries of Sciosophy have missed one of the most delightful pieces of American satire. Doctor Jordon in *The Higher Foolishness* describes Sciosophy as "the wisdom of shadows or shadows of wisdom." It is more than ignorance. It is systematized ignorance based on pseudo-science.

[6]"Raw Milk vs. Pasteurized Milk," Editorial, *Journal American Medical Association*, 97:14, October 3, 1931, p. 1005.

C and that raw milk was preferable. This looked like an important discovery. The work seemed carefully done. Every precaution had been taken to provide control series, to safeguard destruction of the vitamin by experimental artefacts other than pasteurization. Their work was published and caused a furor. Then some astute scientist discovered that the investigators had overlooked the fact that vitamin content of milk varies markedly with the food given the cow. They had failed to use the same cows throughout their series and had made no attempt to measure the variation in vitamin content of milk from the different cows. The experiment was therefore discredited as not worthy of attempting to verify.

Scientists worthy of the name follow Pasteur[7], who said, "Worship the spirit of criticism. If reduced to itself it is not an awakener of ideas or a stimulant to great things, but without it, everything is fallible, it always has the last word . . . It is indeed a hard task, when you believe you have found an important scientific fact and are feverishly anxious to publish it, to constrain yourself for days, weeks, years sometimes, to fight with yourself, to try and ruin your own experiments, and only to proclaim your discovery after having exhausted all contrary hypotheses. But when, after so many efforts, you have at last arrived at a certainty, your joy is one of the greatest that can be felt by the human soul."

The language of science, then, is like Greek to the uninitiated and will probably remain so. The so-called scientific method is still more confusing, but necessarily so. This means that much of your own knowledge of scientific facts and more of what you teach must become dogma. And herein lies a very grave danger of misunderstanding between the professions. Much of the content of health education courses must of necessity be for the teacher "doctrine asserted and adopted on authority." Not very much of it can be facts which are "the result of one's own reasoning or experience." We have seen that personal experience is a dangerous guide in health matters both because it is too close to us and becomes involved with our emotions, and also because it exposes our frail logic to the hazard of fallacious reasoning. Dogma, therefore, becomes almost a necessary evil for the average teacher of health subjects.

Let us face this fact and realize that not all dogma is harmful. It really amounts only to taking some other person's word for things. Its harm can be minimized if we use discrimination in selecting the authority whose word is to be taken and if we hold ourselves in readiness to change dogmatic teaching quickly when required. Only when dogma is combined with bigotry does it reflect upon intelligence. There is much dogma in the eight rules of health, and yet great good has been accomplished by them. There is much dogma in most texts on personal hygiene, but the subject-matter in them is worth teaching.

4. *Paradoxical Uncertainty of Truth.* So much for scientific facts and the methods of attaining them. Now we come to the paradox that a fact is not always a fact, that truth in the scientific sense is a changeable thing, that new discoveries in chemistry, for instance, may upset our whole conception of the causes and treatment of certain diseases. Endemic goiter, as an example, was thought to be a hereditary defect until improved chemical methods enabled us to measure accurately the infinitesmal amounts of iodine in drinking water. Then for the first time, it was found that this type of goiter occurred only where ground water supplies were deficient in iodine. Many years ago an excellent case was made out by a physician who showed that diphtheria occurred in Ireland in direct proportion to the number of potatoes eaten and that therefore diphtheria must be caused by eating potatoes! This is an excellent example of both *post hoc propter hoc* reasoning and complete reversal of what appeared to be a scientific fact through new discoveries in bacteriology.

[7]Vallery-Radot, René, *The Life of Pasteur,* Doubleday Co., New York, 1923.

Dr. William J. Mayo[8] stated on the occasion of the observation of his seventieth birthday by the American Surgical Association, "As I see the younger men picking up the torch and carrying it on, I realize that scientific truth which I formerly thought of as fixed, as though it could be weighed and measured, is changeable. Add a fact, change the outlook, and you have a new truth. Truth is a constant variable. We seek it, we find it, our viewpoint changes, and the truth changes to meet it."

5. *Limitations of Science.* And finally it is important to realize that even science has its limitations. There are depths to which it cannot penetrate, citadels of mystery which it can never assail. G. W. Stewart[9], National President of Sigma Xi, speaking on "The Future Man of Science," says, "We (should) make the world conscious of the nature of the truth obtained by science. Our findings are frequently given too much confidence. The public prefers to assume that there is such a thing as absolute truth, and by inference, that science can and does ascertain fragments of it. But this is just what is not true. All of our discovered 'laws' are not truths but only approximations. . . . After all science has a significant value only to man himself. The value cannot be measured accurately. It is somewhat vague. It stands upon precisely the same footing as the human values found in the history of the many centuries past. The scientists must join with the others in not only recognizing the value of the humanities but also in encouraging them actively."

Conclusion

Thus I have attempted to show that the rapid development of the school health program, its worthwhileness, its inspiration and its large rewards, taken together with the comparative infancy of the public health movement, have combined, first, to create a very fine liaison between the teaching and medical professions, and second, a rather insistent demand by the teachers for more facts and more results from the doctors. This pressure might conceivably result in misunderstanding between the professions with resultant loss of confidence by teachers in the whole health movement. This is a catastrophe which can be prevented if foreseen. Public health men and physicians are gradually understanding more clearly what the teacher wants and the importance of co-operation. We realize that only by having children taught health facts and how to apply these facts can we hope to put the discoveries of preventive medicine to their best use—the prolongation of life. This can only be done when the teacher appreciates her responsibility to exercise a fine discrimination in selecting the content of her courses. And such discrimination can only be effective when the teacher understands something of the scientific approach and method, the pitfalls of fallacious reasoning, the limitations of science, and the necessity of selecting her authorities carefully.

[8]Mayo, William J., "Seventieth Birthday Anniversary," *Annals of Surgery*, 94; October 1931, p. 799.

[9]Stewart, G. W., "The Future Man of Science," *Sigma Xi Quarterly*, XIX:3, September 1931, p. 90.

COMPARISON OF THE GROWTH AND DEVELOPMENT TRENDS OF PUBLIC AND DENOMINATIONAL SECONDARY SCHOOLS IN CALIFORNIA FROM 1890 TO 1920

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A COMPARATIVE study of the trends of growth between the public and denominational secondary schools of California during the period of 1890 to 1920 reveals that the public high schools of the State had made an extraordinary growth greatly exceeding that of the secondary schools of the combined Catholic and Protestant faiths. The unusual growth shown by the public secondary school was the result of large increases in the number of schools reported for this period, and also of large gains in enrollment. The public high schools of California had not only exceeded the denominational secondary schools in regard to number of schools established and in enrollment, but they also had a larger claim upon the general and church populations of the State during a major part of the period in question, showing that the public high schools of the State had very materially increased their holding power in the secondary school field.

During the period of early settlement in the State down to the beginning of the present century, the denominational secondary schools of California had a larger share in advancing the secondary field of education than had the public high school. Throughout the formative years of the State's history, State aid toward the support of the public secondary school often became retarded in order to encourage the lower levels of education. This resulted in many instances in the State depending upon the private academy or college of a particular religious faith to provide education for students of secondary grade.

The first law pertaining to the public high schools of California was enacted in San Francisco in 1856.[1] It was not until 1867 that a free system of schools had been established, representing a transition from the old rate bill system of common school support. In 1880 California reported twelve public high schools, and in the next five years this number had increased to twenty public schools of secondary grade.[2] During the period from 1850 to 1890 approximately forty denominational academies or colleges of secondary grade were established by both the Protestant and Catholic churches in the State. By 1890 there were thirty-seven public secondary schools in operation within the State, while the number of denominational secondary schools for the same year was forty-nine. It was not until after 1900 that the public high schools of California began to

[1]Dexter, E. G., *History of Education in the United States*, p. 147.
[2]Report of the Commissioner of Education for 1880 and 1885.

forge ahead of the denominational schools, and they have increasingly held the lead since the beginning of the present century.

Number of Schools

The increase in the number of public high schools during the period from 1890 to 1920, as shown by Table I, represented a gain of 238 schools compared with a loss of 11 church secondary institutions for the same period. During the thirty-year period the public high schools of California had increased their number by 643 per cent, contrasted with a decrease of approximately 18 per cent for the number of denominational secondary schools. The greatest percentage of increase in the number of public secondary schools took place in the decade of 1890-1900, when a gain of 184 per cent occurred.

TABLE I.

TOTAL NUMBER OF PUBLIC AND DENOMINATIONAL SECONDARY SCHOOLS, 1890-1920

	1890		*1900*		*1910*		*1920*		*1890-1920*	
	Public	*Denominational*	*Public*	*Denominational*	*Public*	*Denominational*	*Public*	*Denominational*	*Public*	*Denominational*
No. of Schools	37	63	105	40	162	35	275*	52	-----	----
Per Cent Gain or Loss			184	—36	54	—12	70	48	643	—18

*Figures for four-year high schools only.

The period from 1910 to 1920 was the only decade which showed a percentage gain in the number of denominational secondary schools. The increase in the number of these schools amounted to 48 per cent, while the largest decrease occurred during the decade of 1890-1900, when a loss of 36 per cent took place. The increase in the number of church secondary schools reported for the decade of 1910-1920 was undoubtedly due to large gains in the number of Catholic secondary schools reported for this period. Of the Catholic and Protestant schools indicated in Table II, the former church reported a loss of approximately 8 per cent for the thirty-year period, while the decrease in the number of Protestant secondary schools amounted to 50 per cent. The greatest decrease experienced by the Catholic church occurred in the decade from 1890 to 1900 with a loss of 33 per cent, while the largest Protestant decrease took place in the same decade, amounting to 50 per cent. Despite the percentage loss reported for the Catholic church for the thirty-year period, this church reported a gain of 45 per cent in the latter decade, showing that the number of its secondary schools were on the increase and that this religious order had had a greater number of schools in operation throughout the entire period, which clearely indicated its dominance in the church secondary school field in the State.

TABLE II.
DISTRIBUTION OF DENOMINATIONAL SECONDARY SCHOOLS, 1890-1920

	1890		1900		1910		1920		1890-1920	
	Catholic	Protestant	Catholic	Protestant	Catholic	Protestant	Catholic	Protestant	Catholic	Protestant
No. of Schools	49	14	33	7	31	4	45	7	.....	...
Per Cent Gain or Loss			—33	—50	—6	—43	45	75	—8	—50

Enrollment

An examination of Table III, showing the comparative growth in secondary school enrollment of the public and denominational schools of California between the years from 1890 to 1920, reveals that the public high school had increased its enrollment by 92,624 students contrasted to a loss of 3,716 students attending the church secondary schools of the State. The public secondary school enrollment in California thereby had gained approximately 2,369 per cent compared to a decrease of about 54 per cent on the part of the denominational secondary school.

It was evident that the growth of the public secondary school enrollment in California for the period from 1890 to 1920 had greatly exceeded that of the church secondary school in respect to percentage increases. The public high school enrollment reached its peak of growth during the decade of 1890 to 1900 when a gain of 223 per cent occurred, while the denominational secondary schools reported a gain in enrollment only once during the latter decade of the thirty-year period with an increase of 125 per cent, being the result of large increases in the number of Catholic secondary schools as already indicated.

TABLE III.
TOTAL ENROLLMENT OF PUBLIC AND DENOMINATIONAL SECONDARY SCHOOLS, 1890-1920

	1890		1900		1910		1920		1890-1920	
	Public	Denominational	Public	Denominational	Public	Denominational	Public	Denominational	Public	Denominational
No. of Pupils	3,909	7,346	12,620	1,687	35,174	1,492	96,533	3,360	.....	...
Per Cent Gain or Loss			223	—77	179	—11	174	125	2,369	—54

The secondary schools of the Catholic church, according to Table IV, reported a greater percentage loss in enrollment during the thirty-year period than had the Protestant secondary school enrollment, the former

church having shown a decrease of 55 per cent compared to a loss of only 8 per cent on the part of the latter church. The Catholic church secondary school enrollment experienced its greatest decrease in the decade from 1890 to 1900 when a loss of 80 per cent occurred. The greatest decrease in Protestant secondary school enrollment took place the decade of 1890-1900 with a loss of 52 per cent. It will be of interest to note that both of the religious faiths showed the same percentage gain in enrollment in the latter decade of 1910-1920, having increased by 134 per cent.

TABLE IV.
DISTRIBUTION OF DENOMINATIONAL SECONDARY SCHOOL ENROLLMENT, 1890-1920

	1890		*1900*		*1910*		*1920*		*1890-1920*	
	Catholic	*Protestant*	*Catholic*	*Protestant*	*Catholic*	*Protestant*	*Catholic*	*Protestant*	*Catholic*	*Protestant*
No. of Pupils	6,613	733	1,336	351	1,264	288	2,955	675	.....	....
Per Cent Gain or Loss			—80	—52	—5	—18	134	134	—55	—8

The writer has made a serious attempt to verify the abnormal figures reported for Catholic secondary school enrollment for the year 1890 but has met with little success. Certain Catholic school men who were interviewed in regard to the matter have agreed that the figures reported for this year were too high and a conservative estimate of 2,000 students would probably represent the actual status of Catholic secondary school enrollment at that time. If the true situation were known, the Catholic secondary school enrollment would undoubtedly show a slight increase instead of a decrease for the thirty-year period.

Number of Students per 1,000 General Population

We have seen that the growth of the public high school in California during the period from 1890 to 1920 had far exceeded the denominational secondary school not only in the number of schools established, but in student enrollment as well. This extraordinary growth on the part of the public high school in comparison to denominational secondary school development is borne out to an effective degree upon the examination of the number of public and church secondary students in relation to the general population of the State. Table V shows the number of public and denominational secondary students per one thousand general population during the period from 1890 to 1920.

The number of public high school students in California per one thousand of the State's population had increased from a little over three per thousand in 1890 to twenty-eight per thousand in 1920, representing a gain of nearly twenty-five students for the three-decade period. The number of denominational secondary students, on the other hand, had

shown a decrease, reporting 6.08 students per thousand in 1890, and by 1920 the number per thousand had dropped to approximately 1.06, representing a loss of a little over five students during the thirty-year period. The percentage gain in the number of public secondary students per thousand general population of the State between 1890 and 1920 amounted to approximately 769 per cent, while the denominational secondary enrollment had decreased by nearly 82 per cent during the same period. It is clearly shown that the public high schools of the State had made an increasingly greater gain in the number of pupils per one thousand general population during this period, having outdistanced by far the proportion of denominational secondary students in respect to the general population. After 1900 it was self-evident that the public high school had very definitely dominated the secondary school field from the standpoint of enrollment.

TABLE V.

NUMBER OF STUDENTS PER 1,000 GENERAL POPULATION ATTENDING PUBLIC AND DENOMINATIONAL SECONDARY SCHOOLS IN CALIFORNIA, 1890-1920

Year	*Population*	*Public High School Enrollment*	*Number per 1,000*	*Denominational Enrollment*	*Number per 1,000*
1890	1,208,179	3,909	3.24	7,346	6.08
1900	1,485,053	12,620	8.49	1,687	1.13
1910	2,377,549	35,174	14.79	1,492	.63
1920	3,426,851	96,533	28.17	3,630	1.06

Number of Students Per Thousand Church Population

It will also be of interest to see what effect the growth in public and denominational secondary enrollment has had upon the Catholic and Protestant church populations of the State during the period in question. In order to ascertain the effect of public high school growth in enrollment upon the enrollment of the denominational secondary schools, a comparison was made of the number of church secondary students per one thousand Protestant and Catholic church membership within the State for the period from 1890 to 1916, as shown by Table VI. Because of the lack of complete figures reported for both church secondary schools for the year 1926, comparisons were made for the years 1890, 1906, and 1916, respectively, based upon the statistics of Religious Bodies reported for these dates by the United States Bureau of Census.

Throughout the period from 1890 to 1916, both the Catholic and Protestant secondary schools of California showed a decrease in the number of secondary students per one thousand church membership. The Catholic church represented a loss of approximately 37.51 students per thousand of its church membership, while the Protestant church had decreased its number per one thousand church membership by nearly five students, showing that the public high schools of the State had made large gains in the number of students formerly attending the secondary schools of both faiths. The percentage loss in Protestant church schools amounted to approximately 77 per cent compared to a decrease of nearly 89 per

cent in Catholic schools during the period from 1890 to 1916. If data were available for the year 1926, this proportion would undoubtedly be still greater in favor of the public high schools. With the increase in Catholic secondary school enrollment in recent years, it is probable that the public high schools would have had greater effect upon the number of students enrolled in the secondary schools of the Protestant faith than upon the enrollment of the Catholic secondary schools.

TABLE VI.

NUMBER OF CATHOLIC AND PROTESTANT SECONDARY STUDENTS PER 1,000 CHURCH MEMBERSHIP IN CALIFORNIA, 1890-1916

Year	*Catholic Church Membership*	*Catholic Enrollment*	*per 1,000 Church Membership*	*Protestant Church Membership*	*Protestant Enrollment*	*per 1,000 Church Membership*
1890.....	156,846	6,613	42.16	123,973	733	5.91
1906.....	354,408	1,207	3.41	257,056	310	1.21
1916.....	494,559	2,300	4.65	408,807	548	1.34

Contributing Factors in Public High School Growth

A number of factors have contributed to the excessive growth of the public secondary schools of California over that of the church secondary schools during the period from 1890 to 1920. Some of the influences which have had a part in recent development and growth of the public high school may be traced to the following educational trends of the past century:

1. A diversified curriculum, fitting the school to the child.
2. Development of the junior high school program of education.
3. The extension of Federal aid in financing vocational education.
4. Gradual disappearance of the denominational secondary school or academy.
5. A growing desire of the state to divorce religious influences in the public schools.

The changes in curricular offerings during the past fifteen or twenty years have done more to make the public high school an institution for the people than perhaps any other factor. A shift from the narrow classical curriculum in vogue thirty years ago over to an enriched program of instruction which provides a curriculum fitted more to the needs of the child, has contributed in a large measure to the increasing popularity of the public high school. The fact that the private secondary school has held more or less rigidly to a classical curriculum up to within very recent years was a factor in its retarded growth, while the public high school had made considerable progress as a result of its introduction of courses in vocational education and related work.

Another factor influencing public secondary school growth was that of the development of the junior high school in this country. A reorganization of our secondary school has brought forward this comparatively new type of institution which has made for greater articulation between the elementary and secondary levels of education, resulting in an increase in enrollment in the public high school. This articulation expressed in

many types of reorganization schemes has provided not only a richer curricular content, but has given greater opportunity for motivating the student toward his life objective. This has resulted in a considerable increase in public secondary school enrollment in the State and throughout the country. The advent of the junior college has, and in the future will be an important factor in increasing the number of students attending our public schools.

The public high school, being an institution of the State, has had considerable advantage over the denominational secondary school in meeting increased costs of operation, while the latter institution has often been forced to close its doors on account of insufficient funds to adequately carry on its educational program. The public schools have not only received the benefits of State support but also have received generous financial aid from the Federal government. Government support toward the public schools began with the Federal land grants, sale of saline lands, and swamp lands, all of which provided a source of revenue for public school support. Beginning with the Smith-Lever Act of 1914 and the Smith-Hughes Vocational Education Law of 1917, increased Federal aid was extended to public education in the form of trade and vocational training which has been a very significant factor in public secondary school growth.

The history of private school support, on the other hand, shows an unstable development, undoubtedly due to the lack of endowment funds to finance a program of education for a sufficient number of years. The smallness of the school, which is a common feature among church secondary institutions, has often resulted in high costs of operation. The failure of tuition fees or rates to cover operating expenses, in many instances barely providing the teachers' salaries, greatly hampered private and denominational school growth.

Since the beginning of the present century, many Protestant boards of education have been faced with the difficulty of maintaining their secondary schools or departments in competition with the rapidly growing public high school, and have gradually begun to drop the secondary branches of instruction from their educational program. In a recent study instigated by the writer it was found that 59 per cent of the 109 denominational colleges of the West have abandoned their secondary departments since 1900.[3] In addition to replies received from these 109 denominational colleges, it was also reported that nine Protestant denominations carrying on educational work in the West had eliminated 53 per cent of its academies which had been at one time or another operating as separate institutions of secondary grade. The discontinuance of the denominational secondary school as evidenced by this study was attributed in the main by church school men to the growth and development of the public high school and because of their financial inability to carry on with increased costs of operation.

[3]See the *School Review* for December, 1931.

Ever since the battle to make the public schools free from religious influences, as many as seven Western states, including California, have set up constitutional restrictions against the use of public funds for religious instruction. The desire on the part of the state to free itself of religious influences has proved to be the pivoting point in the gradual decline in church school development, particularly in the academy movement. The non-sectarian character of the public schools has won increasing support in the public mind and has resulted in greater opportunities for growth than could be realized under conditions of religious controversy, which was largely instrumental in retarding the growth of the public school idea during the nineteenth century.

Summary

1. California public high schools during the period from 1890 to 1920 had increased by 643 per cent compared to a loss of 18 per cent in the number of denominational secondary schools established.
   a. The number of Catholic secondary schools decreased by 8 per cent, contrasted to a loss of 50 per cent by the Protestant church during the same period.
2. The public high schools of California showed a gain of 2,369 per cent in enrollment, while the denominational secondary school enrollment had decreased by 54 per cent during the thirty-year period.
   a. The Catholic secondary school enrollment of the State showed a loss of 55 per cent compared to a decrease of 8 per cent in Protestant secondary school enrollment during the same period.
3. In the general population of the State, the public high schools represented a gain of 25 students per 1,000 population contrasted to a loss of five students per 1,000 population on the part of church secondary schools between 1890 and 1920.
4. In respect to the number of students per 1,000 church membership, the Protestant church showed a loss of 77 per cent compared to a decrease of 89 per cent on the part of the Catholic church during the period from 1890 to 1916.
5. Factors which have contributed to excessive growth of the public high school were found to be:
   a. Improved curriculum to serve practical needs.
   b. Development of the junior high school organization.
   c. Extension of Federal aid to public education.
   d. Gradual disappearance of the denominational secondary school.
   e. State attitude of non-religious influence.

THE PROBLEM OF EQUALIZATION OF EDUCATIONAL OPPORTUNITY AND TAXATION*

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IN TERMS of the willingness with which the public has supported its educational institutions, California is in the lead among the states of the Nation. However, analysis of the intricacies of this support—its incidence and allocation—presents a far less favorable situation.

This discussion will concern itself with the financial phases of equalization or educational opportunity throughout the State, and with the closely allied problem—that of equality in taxation for public education.

The method of school support for current expenditures at present in operation in California places something over one-half of the burden on the local district, about one-fourth of the burden on the county, and the remainder on the State. In 1930 the State contributed 19 per cent of public school costs. This amount is distributed to the schools of the State largely in proportion to children and needed teachers. The factor of the ability of the locality to pay for education is entirely overlooked.

* * * * *

There is one and only one function of the State in participating in educational finance and that is *the equalization of educational opportunity for all pupils within the State*. The school system is a State school system, ordered by the State because it is necessary to the life of the State. To ascertain whether or not the State is tending to make for equality of opportunity for education on the part of all pupils in the State will be the major purpose of this paper.

Because of the large portion of educational expenditures carried by the county and local district any innate differences in the abilities of these localities to support education will be felt materially either in varying amounts of money available for support of education, varying tax rates for educational support, or both. That extreme variations in the ability of localities to support education are the rule rather than the exception is evidenced by the following data:

Using the true taxable wealth per pupil in attendance as the criterion of ability of a locality to support education we find the following to be true:

A. *There are great differences between counties in their abilities to support education.* The county with the greatest ability is twelve times more able to support secondary education than is the poorest. Similar differences in ability to support elementary education are in ratio as about eight to one.

*A paper presented before the Pacific Southwest Academy of Political and Social Science, Ocotber 31, 1931.

B. *There are great differences between districts within counties in their abilities to support education.* In Mendocino County the ratio of ability in elementary districts in 1928 was over 3300 to 1. In other words, in 1928 the poorest district would need to use a tax rate over 3300 times as great as the richest district in order to raise an equal amount of money for the education of each child within these two districts. In 1926 Los Angeles County presented an extreme ability ratio of 366 to 1. In that year the Bee district would have needed a tax rate of $3.66 in order to have raised the same amount of money per child as a $.01 tax would have raised in the Vernon district. Differences between school districts within counties with a ratio of 40 to 1 are quite usual.

C. *There are great differences between larger school districts in their abilities to support education.* The extreme cases are not limited to small districts. Differences between city high school districts in abilities to support secondary education hold a ratio of approximately 16 to 1. Pomona City High School District would need a tax rate of approximately four times the tax rate of San Francisco were the two to attempt to raise the same amount of support per high school child.

D. *An equal tax on the true taxable wealth of school districts will produce grossly unequal revenues per child.* In 1925 a 25c tax on the true taxable wealth of the Julian Union High School District would have produced 17 times as much revenue per child as a similar tax on the Sierra Union High School District. In the case of Mendocino County as cited above an equal tax on the two districts mentioned would have produced over 3300 times as much revenue per child in one district as in the other. A tax of 10c placed on the Summit and the Barstow districts of San Bernardino County would produce approximately 40 times as much revenue per child in Summit as in Barstow.

E. *In general those districts which are relatively wealthy produce a large revenue on a small tax, while poorer districts produce small revenue from a high tax.* We find a high school district with a true tax rate of 14c producing $434 per child as compared with another similar district with a true tax rate of 38c producing but $65 per child. From 127 unselected high school districts a correlation of —.330 was produced between true taxable wealth per child and true district tax rate. There is a fairly substantial tendency for those districts which have the greater wealth to have the smaller tax and *vice versa.*

F. *Wealthy districts spend more for education than do poor districts.* Various correlations have been computed between the ability of districts to support education, as measured by true taxable wealth per child, and the amount of money actually expended on the education of each child. Without going into detail relative to these correlations we may state that they appear as follows: +.618, +.711, +.721, +.782, +.984. All of these figures would indicate the high relationship between ability of a district to support education and the actual expenditures. To quote from the recent Report of the California Commission for the Study of Educational Problems: " . . . Burlingame, in San Mateo County, which has an elemen-

tary expenditure of some $62 per pupil in average daily attendance, derives neither aid nor comfort from the fact that Hillsborough, its next door neighbor in the same county, is able to spend $181.73 per pupil. In 1929 Jefferson district, Los Angeles County, was able to spend only $71.19 per pupil in average daily attendance, while Palo Verdes in the same county expended $258.16 per pupil. Each of these districts receives State aid calculated on exactly the same basis, and the small difference in the amount per pupil derived from county apportionment is an insignificant part of the total difference in income. The inequality is thus almost entirely due to the differences in the tax-paying ability of the two districts."

G. *The State, by its method of taxation for State support, (under Amendment No. 1) has augmented the differences in ability of counties to support education.* There is a tendency for those counties which have the greater wealth taken from them in operative properties (which are taxed for State support) in turn to be among those counties least able to support education. Among the 33 counties in which over 95 per cent of the children of the State are found, the correlation between ability to support elementary education and the proportion of county property taken from the county for State taxation purposes is —.458. There is fairly substantial tendency for the State to take more property from the poor counties than from the rich.

H. *In general the State, in its method of distributing State school funds, gives most to the districts which are already wealthiest.* Out of 19 counties whose true wealth per elementary pupil is above the average of the State, 16 counties, or 84 per cent, receive larger amounts of money per pupil than the average for the State. The situation concerning the distribution of State high school funds is practically identical.

For these conclusions the true taxable wealth per child (in average daily attendance) has been used as the criterion of the ability of a community to support its education. The unit of true wealth per needed teacher has certain obvious advantages over the unit which has been used, as a measure of the ability of the district to support education. Suffice it to say that the latter unit indicates results comparable to those demonstrated with the true wealth per child unit.

As a result of the findings as given above we may state that there are great variations in the abilities of localities to support education, both as compared between counties and between districts. These variations are due to the unequal spread of wealth and children over the State and to the method of taxation for State support which fails to take from localities evenly or in proportion to wealth. Not only are the poorer districts forced to tax higher than richer districts because of their native poverty, but the State in its method of distributing funds (which in general gives more money to those localities which are already more wealthy) forces many of the poorer localities to dig still further into their tax pockets.

The inevitable result is that wealthy localities in general tax lightly for expenditures which are able to produce excellent educational offerings

while poor localities tax heavily for mediocre offerings. As Staffelbach has aptly said:

> Children in wealthy districts are receiving the best education that money can buy at little cost-burden to their parents. Children in poor districts are receiving their education from the skinny hand of poverty. To permit such conditions is to travesty democracy. It reminds one: "For unto everyone shall be given, and he shall have abundance; but from him that hath not shall be taken away even that which he hath," which, though Scriptural, is hardly righteous, and certainly not consistent either with our democratic pretentions or our ideals of equality.[1]

The data presented would indicate the desirability of a greater degree of equalization of taxation and of educational opportunity than now exists. This can be accomplished by greater emphasis, either through method of distribution or additional assistance, on the financial obligation of the county and state in support of public education.

California is not alone in this situation. Every state in the Union has a similar problem, yet the diversified geography and the accompanying differences in social and economic status of various localities augment the natural inequalities of this particular State. California is, however, a member of a rapidly diminishing minority of states which does not recognize the ability of a community to support education of its children as a basis for the distribution of state school moneys. Approximately 80 per cent of the states of the Nation now have definite and functioning programs for the equalization of educational opportunity and taxation. California has no right to claim its position of leadership in public education so long as it permits injustices of the type indicated to remain unremedied.

Although this paper has been concerned primarily with a statement and demonstration of the problem as it exists, a brief consideration of practical difficulties in the path of equalization and general plans of approach to achieve equalization may be appropriate.

California requires that a county, in order to receive financial assistance from the State for support of its schools, duplicate funds received from the State for elementary school purposes and that high school funds so received be doubled. In order to avoid the necessity of poverty-stricken counties being forced to raise further funds to match or double equalization funds to be received from the State, it is essential that this requirement be removed, as it applies to equalization funds which may be made available.

Although the county assessor is required to submit his assessment book under oath that he has assessed property therein according to his best "judgment, information, and belief at its full cash value," without exception the assessors of the State fail in this regard, the variations being from approximately 25 per cent to 75 per cent of true value. This results very naturally in confusion to the layman in comparing abilities of, and costs to, localities to support education, and has a marked effect in limiting income of districts with low assessment ratios. Although the factual

[1]Staffelbach, Elmer H., *Research Bulletin, California Teachers Assn., Oct. 1930*, pp. 6.

data as given in this study have eliminated this variable, these inequalities of assessment are real in their effect upon the problem and its solution. While we should make no insistence upon assessment at full cash value, we do insist that uniformity of assessment should exist.

School districts, especially the more able districts, have been prone to think of the State school funds which they have received as being the inalienable property of such districts rather than the property of the State as a whole to insure that every child within the State be given an equal opportunity for an education without undue burden to the taxpayers. It is believed by many that with proper redistribution of State school funds, such redistribution to be determined in part by the ability of districts to support education, a high grade program of education could be made available to all children within the State without any necessity for increase in financial burden. Before this is possible with funds at present available, however, it is essential that district finance be thought of in less of selfish terms and in more of the spirit of State-mindedness.

Five general types of remedies for inequalities in educational opportunity and taxation have been utilized or suggested. Briefly, these are as follows:

1. The county (or other large) unit of financial purposes has the effect of equalizing taxation and educational opportunity within the county, yet it fails to care for the great differences which exist between counties.

2. The distribution of State funds inversely proportionate to the ability of localities to support education would give more funds to poor localities and less to the wealthy. It would tend to equalize taxes and educational opportunity.

3. Under this plan the State assumes full financial responsibility for the support of public schools, utilizing sources of revenue which may be available to it. This plan has much in its favor, especially should it eliminate the general property tax for support of education. While it would completely equalize, assuming property distribution of funds, it might possess other undesirable features, mainly among them the elimination of local initiative and interest in matters educational, and over-centralization.

4. A number of states have established public school equalization funds, either by setting aside a certain proportion of the available State school funds or by obtaining additional funds for this purpose, these funds to be expended to localities in proportion to need. For simplicity and ease of operation this plan has much in its favor.

5. By the New York plan the state first determines the cost of a "minimum program" of education per child for various classes of districts. Each district is required to set a certain tax rate on its true wealth. After the revenue from this tax on true wealth is applied to the "minimum program" the state provides sufficient additional funds (if they be necessary) to attain this "minimum program." Anything above the "minimum program" is cared for by the local district. This method assures a certain minimum standard of education to all pupils on an equalized tax rate, but

permits the locality to care for any "frills" or extras which it may desire above this minimum. The difficulty in arriving at an equitable equalized assessment of all taxable properties within the State must be overcome before this plan is entirely just in its operation.

Above all, any plan which California may consider must incorporate regulations which will tend to eliminate the weak and inefficient small district schools.

In conclusion may we repeat that the function of the State in participating in educational finance is to equalize educational opportunity for children within the State. Although the localities in California have many and grave variations in abilities to support education, the present State program of educational finance fails to recognize the variations. As a result children in many of the poorer districts are denied educational privileges which are essential, even though the patrons of these districts are paying heavily. In contrast, children in many wealthy districts are furnished educational luxuries with but little financial effort on the part of their communities.

Democracy in California, as elsewhere, is dependent upon the ability of each citizen to govern or to be governed. A State school system should be the protector of democracy. Without more equality of educational opportunity than now exists we believe that the State is not only avoiding its native responsibility but that it may be preparing pitfalls for the future.

THE FORMATION OF A JUNIOR COLLEGE IN SOUTHERN ALAMEDA COUNTY

FREDERICK M. FOSTER

This article is based on a study made by Dr. Foster for a seminar report at the University of California, and concerns itself with a proposal to organize a junior college district in the southern part of the county in which the university is located. The proposed location would be some thirty-five miles from the seat of the university. The paper is published as an example of the type of preliminary investigation that should be made prior to submitting the question to a vote of the people. In the case at hand, the boards of high school trustees have not as yet consented to submit the issue to the people, although it is said that a generous citizen of the proposed district has offered a gift of $100,000 toward establishing a junior college at Niles.—EDITOR'S NOTE.

Introduction

A JUNIOR college is an institution of collegiate grade which provides instruction for a period of two years succeeding graduation from a standard high school. These colleges have enjoyed a remarkable growth in California since the passage of the 1907 law permitting high school districts "to prescribe post-graduate courses of study for the graduates of such high schools, which courses of study shall approximate the studies prescribed in the first two years of the university courses." At the present time there are 17 public junior colleges in junior college districts, 17 public junior colleges in high school districts, and 17 private junior colleges, making a total of 51 junior colleges in California, plus one State junior college. In the United States at large there are probably 450 junior colleges, showing that this "capstone of secondary education" has made for itself a permanent place in our educational system.

Attendance at this kind of institution has also had a gratifying increase as is shown in the accompanying table (State Department Bulletin No. 1, 1932).

TABLE I.

STATE ENROLLMENT IN CALIFORNIA PUBLIC JUNIOR COLLEGES

1924-25	1925-26	1926-27	1927-28	1928-29	1929-30	1930-31
5,295	5,772	8,073	10,710	13,493	20,561	26,961

This increase in attendance furnishes a further proof of the fact that the junior college is satisfying an educational need in American society which the universities and four-year colleges had failed to reach. When it is remembered that about one-third of the persons attendang junior colleges are taking special courses, one sees that the junior college is furnishing instruction which otherwise would be entirely out of the reach of this large number of people. Further statistics (Joyall) show that the great majority of junior college students is drawn from within a circle with its center at the college and a diameter of about forty miles, and the obvious

inference is that as these colleges increase in number the attendance will increase in a similar proportion.

It may not be out of place at this point to give a resumé of the reasons for attending a junior college. In brief they are:

1. An opportunity for two further years of education is possible to high school graduates who have not the financial resources for attending a university.
2. Students whose parents feel that they are not sufficiently mature to leave home may continue their education without a break.
3. Many students, for one reason or another, graduate from high school without a sufficient number of recommending units. The junior college does not close its doors to these students and affords them an opportunity to make up their deficiences for university entrance if they so desire.
4. It has been found that a wide field of occupation is open to persons with training which is advanced beyond high school graduation. For example, about 70 per cent of the engineering work now being done in California needs training which can acceptably be given by a junior college in two years. The term "semi-professional" is frequently applied to this type of education.
5. The movement for further education of adults is increasing yearly. The junior college has already taken its place in this movement by furnishing late afternoon and evening classes especially adapted to adults and given not only in the college buildings but also in the various towns included in the junior college district which desire this instruction. This extension work is one of the prime reasons for the existence of the junior college.

The Need for a Junior College in Southern Alameda County

That part of Alameda County which would make a natural unit for the support of a junior college extends from the southern city limit of San Leandro on the northwest to the hamlet of Mountain House on the east and contains the four townships of Eden, Washington, Pleasanton, and Murray. There are approximately 144 square miles in this territory and 15 towns are situated therein. Paved roads abound and furnish all-year transportation to any part of the district. It is about 38 miles from San Leandro to Mountain House, and so a junior college located at a mid-point in the district would fall well within the topographical limits laid down by Joyall.

The present population of southern Alameda County, with predictions for the immediate future, has been furnished to the writer through the courtesy of the Pacific Telephone and Telegraph Company. The accuracy of these data is well known.

TABLE II.
POPULATION

	1-1-1910	1-1-1920	4-1-1930	1-1-1932	1-1-1937
Eden	11,515	17,983	31,897	34,000	41,000
Washington	7,874	8,494	12,711	13,400	15,700
Pleasanton	2,883	2,296	2,750	2,800	3,100
Murray	4,137	3,908	6,082	6,300	7,000
Total	26,409	32,681	53,440	56,500	66,800

The number of students from Alameda County attending junior colleges outside of Alameda County on October 25 was 317, and the cost to the county for their tuition was $65,000. We shall see later that this sum is more than the budget for the first year of the proposed junior college. The colleges most commonly attended are: Sacramento, Modesto, San

The high school enrollment on October 19 for the four union high schools was as shown in Table III.

TABLE III.
ENROLLMENT

Hayward	*Washington*	*Pleasanton*	*Livermore*	*Total*
812	432	134	287	1,675

The average daily attendance for the past five years of the four schools was as shown in Table IV.

TABLE IV.
A. D. A.

	Hayward	*Washington*	*Pleasanton*	*Livermore*	
1926-27	538	260	104	154	
1927-28	533	293	110	177	
1928-29	570	338	115	196	
1929-30	622	351	117	214	
1930-31	709	370	115	235	Total, 1,429

Joyall sets up a minimum requirement of 1,250 in average daily attendance.

Jose, San Mateo, and Marin. The fact that students are willing to go these distances and pay the resulting expenses of commutation or living is the best possible proof of their desire for further education.

The three tables given furnish visible evidence of the fact that southern Alameda County is not a static community but is steadily growing in size. Not only is the number of inhabitants on the upgrade, but the high school population has increased in even greater proportion. Thirty-one students from the proposed district are able and willing to bear the expense of attending outside junior colleges. It, therefore, seems to be a warrantable assumption that southern Alameda County not only needs a junior college at the present time but also will need one to a greater degree in the immediate future.

In September, 1931, the writer conducted a survey of the low senior classes of the four union high school districts composing southern Alameda County. The results of this survey were exceedingly interesting as showing the desire of these students for further education. A summary is given in Table V.

TABLE V.
SURVEY RESULTS

Total replies received	223	
Students wishing to continue education	173	or 77%
Students not wishing to continue education	50	or 23%
Students wishing to attend local junior college	151	or 87% of 173
Students not wishing to attend local junior college	22	or 12% of 173

It is apparent that a local junior college would be welcomed by the present high school students, and there is much evidence that it would be welcomed by their parents.

It appears practically impossible to make a trustworthy estimate of the number of persons who would enroll as special and extension students. In the Siskiyou survey (p. 27) an estimate of 33 per cent was made. A similar estimate would add 50 to the number given in Table V, making a total of 200 local students, which is 12 per cent of the total high school population.

The present high school population, 1675, is 3 per cent of the total population. That percentage of the total population for 1932 gives us an enrollment of 203 junior college students, and for 1937 of 240 local students, thereby proving that the establishment of a junior college in southern Alameda County is abundantly justified.

A further source of students is the number which attends from outside the local district. Statistics given above show the number which is attending outside junior colleges from within the district and county. It is probable that a considerable number of these students would welcome an easier commuting trip and would attend the local junior college. A survey recently made in Oakland estimates an attendance at a proposed junior college in that city of 2000 students, and it is certain that a junior college in southern Alameda County would attract enough students from Oakland to fill its classrooms. No definite time has been set for the formation of the Oakland junior college, but it is certain that at least three years will elapse before the proposition will be considered. Even at that time it is not likely that the college will offer instruction in the regular lower division university subjects. Furthermore, any outstanding curriculum, as the course in agriculture at Chaffey, attracts students from all over the State, and it is not beyond the bounds of possibility that a junior college in southern Alameda County might establish an equally well reputed body of instruction in agriculture or some other line of effort. The problem of students is therefore not one which need cause much concern.

The Curriculum

The fourth question in the southern Alameda County survey endeavored to discover the type of junior college course preferred by the students. The number of answers given to this question will not agree with the number of replies received, as the students were requested to give their first, second, and third choices. Some did as requested and some did not, and so all the replies were merely checked against the subject. Not too much importance should be attached to this portion of the survey, for high school seniors cannot be expected to be absolutely sure as to their future careers and also a certain amount of carelessness is to be discounted. The results are, however, worth some attention.

Academic or general culture	18	Medical Nurse Training	17
Pre-law	2	Foremanship Training	8
Pre-dental	0	Navigation	18
Pre-medical	4	Music	19
Pre-engineering, all types	41	Art	7
Agriculture	9	Aviation	22
Forestry and lumbering	19	Other courses:	
Home Economics	19	Pharmacy	1
General Business	60	Journalism	2
Office and Department Store Man	17	Social Service	1
Hotel Management	0	Cosmetology	3
Salesmanship	11	Foreign Trade	1
Dental Nurse Training	6	Radio	1
		Printing	2

A consideration of these replies, together with a knowledge of general junior college curriculum procedure, will enable us to sketch a curriculum which probably will be acceptable to the greater portion of the students who will attend. The four high school principals and the junior college director, by forming an association among themselves, will bring about an articulation between the schools and the college which will be of advantage in the solution of mutual problems, will assure adequate preparation for college work, and will avoid unnecessary duplication in instruction.

The 27 choices indicated as academic, pre-law, pre-medical, pharmacy, social service, and foreign trade call for the traditional university preparatory course which serves as a substitute for the first two years of the university course in the College of Letters and Science.

The 41 choices of pre-engineering cannot be satisfactorily assigned to the regular university preparatory engineering course as the survey question is not sufficiently definite. Each one of the students should be personally interrogated so as to determine whether the university preparatory or the semi-professional course would be best suited to his needs. The number of choices, however, makes it certain that both of these courses should be offered by the junior college.

The 9 choices of agriculture call for careful thought. Southern Alameda County is predominately an agricultural and horticultural community, with some stock raising and dairying. The small number of choices, which becomes smaller when we consider that there are some second and third choices here indicated, makes it certain that few of the boys intend to become farmers. The question, indeed, involves a general policy, namely: What semi-professional course shall be given the greatest emphasis? If a junior college is to become known as a center for a particular subject and is to use such a reputation as a drawing card, that subject should be chosen which will ultimately best fit into the needs of the college's clientele and which will provide practically assured occupation after the student's graduation. Careful consideration will have to be given to the opportunities offered to graduates in the metropolitan bay region before deciding such a momentous question and the results of an investigation into these opportunities will have to be weighed. At the present writing such an investigation has not been carried on and hence no decision can be made. On account of the expense involved in the installation of an efficient department of agriculture, both as to personnel and matériel, it would appear on the surface that this expense is not justified, especially when the small number of prospective students is considered. In addition, the question of extension and consultation work in agriculture must be weighed. There is undoubted room for this type of endeavor, and it would appear worth while to employ a man who could be of service both in teaching and also in field work. The matter will have to be left to the decision of the board of trustees after the investigation above referred to has been made, and after individual conferences have been held with those students who have indicated an interest in the subject.

Nineteen choices were indicated for the subjects of forestry and lumbering. While the immediate junior college district offers few opportu-

nities for these vocations, it cannot be denied that the administration is warranted in offering this instruction. It has been shown (Hall's thesis) that a junior college should not limit its offerings to the vocational opportunities offered by its own particular district. The Siskiyou survey (pp. 36-37), sketches the importance of forestry as a vocation, and also points out that there is no school on the Coast which offers instruction in this subject on the semi-professional level. The writer has been unable to discover any courses in forestry offered in California junior colleges with the exception of Pasadena. While it is not probable that this subject is the one for which the southern Alameda County junior college should strive to gain its greatest reputation, there can be no question but that instruction in it should be offered and that the college should go to some length in providing a thoroughly efficient course of study for prospective forest rangers. This is peculiarly a field for junior college instruction, as men who have had a university course in forestry do not care for this work.

The subject of home economics was asked for by 19 girls. While considerable attention is given to this work by the high schools, there is room for advanced instruction by the junior college, and this fact is generally recognized, as a survey of the catalogues will show. The employment of an instructor who is competent to teach the two subjects of foods and clothing will open up a thoroughly justifiable department and will pave the way for any future development which the students may demand.

Eighty-eight choices were registered for the subjects of business, office management, and salesmanship, all of which naturally belong to the commercial department. This large election points to an overwhelming interest on the part of the young people resident in an agricultural community and indicates with great clarity their desire for a business and consequently urban life. The college should, therefore, proceed without delay to the construction of curricula on the collegiate level which will satisfy the demand and which will train its students to fill commercial positions with satisfaction both to their employers and to themselves. Examples of such curricula are accounting, banking, general business, and secretarial. Attention should also be given to preparation for the examination leading to the title of Certified Public Accountant. At present, commercial students on the collegiate level are forced to undergo the expense of tuition at private business colleges, and it is certainly the function of a public junior college to provide comparable instruction so that this tuition expense may be avoided. Skilful articulation with the four high school commercial departments will result in adequate preparation for college work, will avoid duplication and overlapping, and will lessen expense for both high school and junior college. To this end, conferences between the five departments should be held at least once a year and probably more often, so that the results just mentioned may be attained. These conferences might be extended to other departments and would serve to supplement the administrative conferences referred to above. The end to be sought is the efficient education of the children of southern Alameda County.

Twenty-three girls indicated an interest in training for the position of dental or medical nurse. This training is composed of both practical and theoretical work and calls for co-operation between hospital and junior college for its successful accomplishment. The districts fortunate in being situated reasonably close to both Oakland and Livermore, where there are abundant opportunities for the practical training. The college can easily provide the theoretical work, as many of the required subjects are already included in the academic curricula.

Eight choices were made for foremanship training. At the present time this subject has not been taught in junior colleges and consequently no curriculum has been worked out. The field is undoubtedly an attractive one and falls well within the purview of a junior college, but it is probable that financial considerations will stand in the way of giving this instruction during the first year.

Eighteen boys showed an interest in navigation. As an occupation this subject calls for both practical and theoretical training, of which the latter could be obtained at the college. Navigation is also closely allied to the general subject of aeronautics, for which 22 choices were indicated, and the ground work for both subjects forms a legitimate part of junior college instruction. It is questionable for various reasons whether instruction in flying should be offered.

The two subjects of music and art should be given regardless of the number of students electing them at the outset. There is even a noticeable tendency among educational institutions to require courses in appreciation. Subjects of such undoubted cultural value should be given the fullest possible opportunity of impressing themselves on the lives of all students, but there are means of so doing without requiring them.

Scattering choices were indicated as follows: one each for pharmacy, social service, foreign trade, and radio; two each for journalism and printing; and three for cosmetology. These subjects, with the exception of printing and cosmetology, are easily cared for by departments to be mentioned in the succeeding paragraphs. Printing calls for a rather expensive equipment, as does cosmetology, and their inclusion at the outset is questionable.

To care for the choices indicated, instruction of both university and semi-professional nature should be furnished in the following departments: aeronautics, art, astronomy, biology, business, botany, chemistry, economics, engineering, English and journalism, forestry, French, geology, history, home economics, Latin, mathematics, music, philosophy and psychology, physical education and hygiene, physics, political science, public speaking and dramatic art, Spanish and zoölogy. These are departmental headings and naturally include various subjects, *e. g.*, instruction in radio falls to the physics department and bacteriology to the biology department.

As already has been stated, the number of students causes no concern. On the contrary, care should be taken as to the number to be admitted. Since the entire expense for the first year falls on the district, it is desirable to keep this expense as low as is consistent with efficient work. The sal-

aries of the teachers form the largest single item in the budget, and so their number should be kept within bounds for the first year; this particularly as it is not economy to skimp on individual salaries, for the college must make its reputation for sound teaching at once and so the best teachers must be obtained. Consequently not more than 250 students should be admitted at the outset. This number of students, together with those subjects which must be offered after possible combinations of subjects have been made, calls for fourteen teachers. The small number of students per teacher for the first year is immaterial. It is of prime importance to offer the needed subjects, for considerable discontent arises among students if they cannot secure the instruction which they desire. The wishes of all the students cannot possibly be met, of course, but the administration should endeavor to comply with the very great majority of those wishes because students are the *raison d'être* of an institution of learning.

The question of the adoption of a salary schedule is one about which there is much difference of opinion. Some administrators prefer not to have one, so that they can pay teachers the salary they think necessary in order to secure them. Some boards of education object to automatic increases, as they think either that the amount of money paid for salaries will thus speedily become too great, or that the supply of teachers is so large that a dissatisfied one can easily be replaced. It appears to the writer that sound administration demands a happy corps of teachers, and that a just salary schedule is a large item in making for happiness, as it insures equitable treatment for all and removes a yearly source of worry. The following is submitted as a salary schedule:

Prerequisite to employment, degree of M. A. and at least two years of successful secondary teaching experience.
First year's salary, $2760.
Second year's salary, $2760.
Third year's salary, $2856.
Hurdle of 4 units of summer session work.
Fourth year's salary, $2976.
Fifth year's salary, $3120.
Sixth year's salary, $3276.
Sabbatical year. Salary usually $3276 minus $2760, $516.
Seventh year's salary, $3444.
Eighth year's salary, $3648.

Certain points in this schedule may need elucidation. The degree of M. A. need not be an indispensable prerequisite, as there are certain cases where the lack of it does not detract from the value of the teacher. Examples are physical education and much of the non-academic teaching. Teachers who have more than the minimum experience may be placed on the scale at whatever point the director thinks best in order to secure them, but after that time they should advance as per schedule. The hurdle between the third and fourth years cannot be passed until the teacher has credit for at least four units of summer session or regular session university work in subjects approved by the director, secured between the time of employment and the beginning of the fourth year of teaching. Until

this credit has been obtained the teacher remains at the third year's salary. The State law now provides that boards may give sabbatical leaves of absence after the sixth year of employment. For the teacher on sabbatical leave a substitute would have to be employed for that year. The substitute could be paid at the first year's rate and the difference between that rate and the sixth year's rate would allow $516 to be paid to the teacher on leave. It seems just that the teacher who is given a leave should agree to return to the institution for at least two more years. It will be noticed that all the various rates of salary are divisible by twelve. This fact allows the payment of twelve equal installments without the small loss which is otherwise incurred. The administrative staff is not included in the salary schedule, even though the two deans are expected to do some teaching. A rate of $3540 is suggested for them and a rate of $5004 for the director.

Costs of Operating the Junior College

The costs for operating a district junior college are ordinarily listed under the following headings: general control; supervision and instruction; maintenance; operation; auxiliary agencies; fixed charges; debt service; and capital outlay.

For a district junior college operating under its own board of trustees and with its own plant, the cost of general control is very little, averaging 4.2 per cent of the whole. The estimate for this item the first year for our junior college is $2500.

We showed above that 14 teachers would be needed for the first year. The average annual salary of full-time regular teachers in the 16 district junior colleges is $2896. In following out our salary schedule the younger teachers will receive $2760 and the others rates varying according to their experience. It would be advisable to secure teachers who could be placed at different points on the schedule so that a percentage of larger experience might be obtained. We must therefore estimate an average salary on our schedule and for this purpose we will take the third year's salary, or $2856. The estimate for teachers' salaries is therefore $39,984. To this should be added $7080 for the deans and $5504 for the director, or a total of $52,068.

For the first year we need anticipate no expenditure for capital outlay or debt service. Under the item of fixed charges we should provide for compensation and building insurance. This is usually written for a three-year period and an allowance of 2000 should be made for it.

In estimating expenses it is usual to allow the sum of $250 per student. For 250 students the amount would be $62,500, and we have already accounted for $56,508. The remainder, $5932, is thus available for maintenance, operation, and auxiliary agencies. The last item amounts to little or nothing, as transportation is not provided for owing to the already existing system of public buses. Maintenance on new buildings should not be expensive. The principal items of expense will thus be salaries for employees of the buildings and grounds staff; fuel, water, light and power, and telephone service. Rental for the last item amounts to $500 per year.

This is calculated from data furnished by the Telephone Company on the basis of a dial switchboard having 23 dial room-stations. An additional allowance of $100 should be made for toll service. Salaries for the buildings and grounds staff of two men will amount to $3000. The sum of 2332 thus remains for other and contingent expenses.

Nothing has been said thus far concerning the major items of expense in starting a junior college, namely, the cost of buildings, grounds, and equipment. The exceeding generosity of a citizen of Niles has provided an initial donation of $100,000 with the proviso that the institution be located at Niles. It is not difficult to comply with this proviso. Geographically, Niles is near the center of the proposed district, being situated 14 miles from San Leandro and 16 miles from Livermore. The slight difference in mileage is more than compensated by the fact that the location west of the hills is closer to the bulk of the future junior college population. Niles is also located at the junction of several main arteries of travel and is well served by public bus transportation. Plans are under way to secure additional donations and the anticipation appears well founded that the college will be able to start without the customary bond issue.

The question of support remains to be considered. The assessed valuation for the proposed district is $38,000,000 and the true wealth is estimated at $76,000,000. The district is thus amply able to support a junior college, especially if it is relieved of the burden of paying for buildings and grounds. The budget calls for an expenditure of $62,500 for the first year and this must be provided entirely by the district. A 17 cent tax on $38,000,000 will provide $64,600, which is sufficient to care for the estimated expenses. An estimate of 150 students from the immediate district is justified by the high school survey and we are admitting an additional 100 from outside the district. Tuition may be charged these latter students for the first year at the rate of $315 which is the budget estimate of $250 plus $65 for the use of buildings. This amounts to $31,500 which will be available for the second year's budget. State aid on the basis of 250 units of A. D. A. will amount to $27,000. A total of $58,000 may thus be subtracted from the budget for the second year. Tuition charges after the first year will be at the rate of $215, as the $100 from the State must be subtracted. If a budget is adopted for the second year comparable to that of the first year, the sum of $4500 is all that need be raised by the district. This sum is negligible. Therefore the district would be in a position to make some necessary expansion in curricular offerings without noticeable effort.

Summary

We have sketched the need for a junior college in Southern Alameda County and have showed that the formation of one is abundantly justified by the present and future population and by the desires of the high school students. A curriculum has been indicated which was based on a survey of the students and the district vocations. The costs have been outlined and the support has been shown to be ample.

A STUDY OF THE ABILITIES OF CERTIFICATE AND SEMI-PROFESSIONAL STUDENTS DOING COLLEGE ZOOLOGY

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FOR the seven years previous to the fall of 1931 the author has taught college zoölogy to classes consisting of both certificate (form A) and semi-professional (form B) students. From the beginning of this period the idea of making a study of these two groups as to their relative abilities to do the academic college zoölogy presented itself. Now that the course has been divided into certificate and semi-professional zoölogy, the experiment may be said to be concluded, and the tabulated data are offered for consideration.

Realizing that a previous knowledge of the student's form or I. Q. might influence favorably or unfavorably the instructor's attitude in helping or guiding certain individuals, thus voiding the value of the study, the writer determined in advance not to avail himself of this information during the time of instruction. After the filing of the semester's grades with the registrar, a check-up was made from the students' records to ascertain their statuses. Grading by a curve has not been attempted in the smaller classes and only to a limited degree in the larger classes; rather has it been done according to an absolute standard, as may be deducted from a study of the data given below. The term grade is determined usually from an average of the following: laboratory drawings and reports, 30 points; examinations during the semester, 40 points; final examination, 30 points. Only those finishing the course are herein considered.

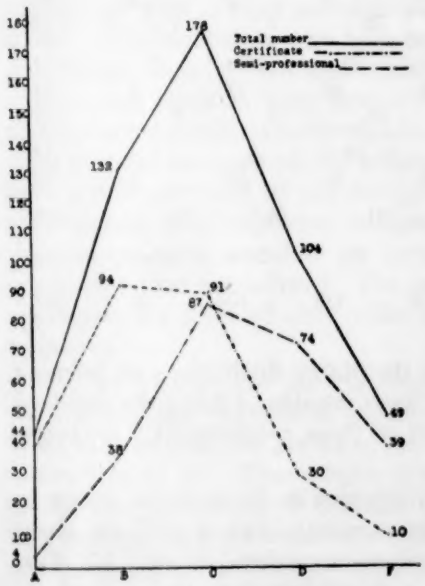

FIG. I.

A graph showing the distribution of grades to 507 students as a whole and according to status.

The data for nine different classes, involving instruction in two junior colleges, are the material used in this report, and here follow.

Significance of Data and Conclusions

A critical study of the figures given reveals several things that concern persons interested in junior college problems. First, it shows that

TABLE I.

A DISTRIBUTION OF GRADES TO STUDENTS IN NINE CLASSES OF ZOOLOGY ACCORDING TO STATUS AND ACCORDING TO THE CLASS AS A WHOLE

Class	*A's*	*B's*	*C's*	*D's*	*F's*	*Totals*
Certificate	2	6	2	2	2	14
No. 1 Semi-professional	0	3	4	6	1	14
Total	2	9	6	8	3	28
Certificate	2	4	6	2	0	14
No. 2 Semi-professional	0	1	8	6	3	18
Total	2	5	14	8	3	32
Certificate	6	7	8	1	0	22
No. 3 Semi-professional	0	1	8	4	7	20
Total	6	8	16	5	7	42
Certificate	3	11	2	3	1	20
No. 4 Semi-professional	2	4	6	13	9	34
Total	5	15	8	16	10	54
Certificate	4	4	4	3	2	17
No. 5 Semi-professional	2	11	14	9	5	41
Total	6	15	18	12	7	58
Certificate	6	8	9	3	0	26
No. 6 Semi-professional	0	2	11	17	6	36
Total	6	10	20	20	6	62
Certificate	3	8	5	2	3	21
No. 7 Semi-professional	0	0	4	1	0	05
Total	3	8	9	3	3	26
Certificate	11	26	31	5	1	74
No. 8 Semi-professional	0	10	10	10	7	37
Total	11	36	41	15	8	111
Certificate	3	20	24	9	1	57
No. 9 Semi-professional	0	6	22	8	1	37
Total	3	26	46	17	2	94
Grand Certificate	40	94	91	30	10	265
Total Semi-professional	4	38	87	74	39	242
Total	44	132	178	104	49	507

the system of selection as exercised in the higher institutions of learning is a success insofar as those selected are more capable of doing the standard academic work of colleges, 85 per cent of these receiving "C" or better and only 3.8 per cent failing.

Second, it shows that this means of selection is likely to be wrong in a few cases. The 40 certificate students receiving "D" or "F" are about balanced by the 42 semi-professional students receiving "A" or "B." Disconsidering mitigating circumstances, it is evident that the method of selection in these cases is faulty. The colleges have their flunk lists; the junior colleges have their transfer curricula; thus whatever unfairness may exist in the present system of selection may be obviated.

Third, it is evident from the figures that the course is not meeting the needs of the students of the semi-professional type. If only 53 per cent of these students can or will react to the course with enough interest or diligence to get a grade of "C" or better, then something is wrong and the college should make an effort to improve the situation.

The first obvious wrong is in the very fact that the two groups have been mixed. The instructors in charge are required to cater to those who have certain requirements to meet; the others have to follow suit, and whether they like it or not they are judged according to the ability of those few who are going on to college. And if grading is done on a standard scale for the class as a whole, the semi-professional students find themselves trailing the list. It would be far more encouraging to a student to try to make good, if he knew he would get a respectable grade for his efforts. Segregation of the semi-professional students, then, would raise the grades of the students essentially one grade higher, if a standard curve is used.

The second obvious wrong in the mixing of certificate and semi-professional students is in the subject matter taught. The ideal semi-professional course should present the high lights of the field without reference to the possibility that subject matter in some upper division course is being usurped or that all abstractions and theories that are to be used "some place further on" are memorized.

The new problem of organizing courses for the semi-professional students is a chastening one, for it puts upon the instructor the need of finding out what is most useful to the student and how it may best be "put over". The instructors who have taught these courses find that they have a different class of students—students who are restive under the old scheme that takes so long, students who feel that social attainments are equally as important as understanding Einstein (or moreso), students who want to make the most of life before they have lived the most of it. They have a different kind of psychology as a rule; they are extravert. They may become good salesmen, business leaders, or political leaders. Thus the concepts they are after are surveys and appreciations of the fields of knowledge that are offered. The teacher, then, must know the student, appreciate his point of view, offer the high lights of the subject, and try to inspire.

As we arrange the semi-professional course in zoölogy, we feel that we are entering unexplored ground. Our maps will have to be revised from time to time, we are sure, but there are some old maps which tell us where not to go. Our efforts are being extended toward making the course so different that it will not be referred to as being parallel to college zoölogy, and students who transfer may take the latter course without doing a great amount of repeating.

THE ACTIVITIES OF HIGH SCHOOL PRINCIPALS IN CALIFORNIA

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A STUDY of the activities of high school principals in a selected group of high schools in California was made for the purpose of answering certain administrative questions.

The study has a number of limitations, which, in a measure, condition the results. It is based in the main upon a questionnaire, and is therefore subject to all the difficulties and limitations inherent in gaining information by the questionnaire method. Further, the sampling process was confined to a single group of high schools, those with enrollments between 500 and 1500. The conclusions may be valid for this particular group, but the evidence will not warrant generalization.

One hundred eighty principals were asked to describe the activities which comprise the work of the principalship and to offer certain suggestions for improvement. Ninety-two responded. Some offered suggestions, but by far, the larger majority criticised prevailing conditions and admitted, in a number of cases, that they knew no way to improve.

Supervision of Instruction. A number of principals reported that they gave no time to the supervision of instruction, as that important matter had been delegated to vice-principals. Four principals reported actual supervisory work on their part, the number of hours averaging twelve per week.

At every convention of principals within the memory of the writer there has been the reiteration of the cardinal principle that supervision of the learning activities is the most important duty of the principal. In high schools between 500 and 1500 enrollment this function appears in no instance to take precedence over other activities which engage the time of the principal.

NUMBER OF HOURS PER WEEK HIGH SCHOOL PRINCIPALS GIVE TO SUPERVISION OF INSTRUCTION

	Number of Cases
15 hours	1
12-14 hours	4
8-11 hours	7
4-7 hours	17
0-3 hours	10
Delegated to others	32
Total	71
Average	6
Standard deviation	6.64

Inspection of Grounds and Buildings. There is a wide variation in the number of hours devoted by principals to the task of inspecting grounds

and buildings. Some principals delegate the task to others, including the janitors; others place the burden upon the shoulders of one or other of their vice-principals. It is difficult to justify the devotion of an average of two and a half hours per week to the routine task of inspection of grounds and buildings, when a different organization might be set up which would as effectively care for the matter. The distribution of time is given in the following table.

NUMBER OF HOURS PER WEEK HIGH SCHOOL PRINCIPALS GIVE TO INSPECTION OF GROUNDS AND BUILDINGS

	Number of Cases
10-12 hours	2
7-9 hours	0
4-6 hours	19
0-3 hours	51
Total	72
Average	2.5
Standard deviation	3.06

Clerical Work. No principal reported having no clerical work to do. Several of the principals participating in the study might properly be called "office principals" since they report spending twenty hours per week in clerical work. The average of nine hours per week seems too high. In schools under 300 enrollment it might be justified but not in schools from 500 to 1500 enrollment.

Modern business would not permit an executive to devote the proportion of time shown by the participating principals to clerical work. Principals apparently meet each day's problems as they arise, planning little and criticising their activities from the standpoint of efficiency not at all.

NUMBER OF HOURS PER WEEK PRINCIPALS GIVE TO CLERICAL WORK

	Number of Cases
20 hours	1
15-19 hours	3
12-14 hours	0
9-11 hours	13
6-8 hours	22
3-5 hours	18
0-2 hours	4
Total	61
Average	9
Standard deviation	8.96

Conferences with Assistant Principals, Vice-Principals, and Heads of Departments. Quite probably principals hold so many informal conferences with assistants in the educative process that the reports concerning this activity are somewhat unbalanced. Nevertheless, principals apparently devote little time to this important function of administration. The attached table does not consider conferences with teachers, but is strictly confined to assistant principals, vice-principals, and department heads.

NUMBER OF HOURS PER WEEK PRINCIPALS GIVE TO CONFERENCES WITH ASSISTANT PRINCIPALS, VICE-PRINCIPALS AND DEPARTMENT HEADS

	Number of Cases
10-12 hours	2
7-9 hours	6
4-6 hours	11
0-3 hours	56
Total	75
Average	2
Standard deviation	2.98

Comparing Results with Department Head Survey. In 1929, in the city of Los Angeles, a survey was made of similar factors in the activities of heads of departments in one of the divisions of the curriculum. To compare the results of the activities of department heads with that of principals reveals the direction in which the activities of these two groups lead those who participate in the educative process.

NUMBER OF HOURS PER WEEK DEPARTMENT HEADS GIVE TO FOUR TYPES OF WORK

Department Head Number:	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
Administrative work	5	2	0	1	1	0	0	0	1	0	2	0
Semi-administrative	8	2	0	1	1	0	0	0	0	0	2	0
Clerical work	45	25	0	30	25	0	0	0	12	25	40	0
True supervision	7	10	0	2	3	0	0	0	2	5	10	0

AVERAGE NUMBER OF HOURS PER WEEK DEPARTMENT HEADS GIVE TO FOUR TYPES OF WORK

	Average Hours	
	Weekly	*Daily*
Administrative work	2	½
Semi-administrative	2	½
Clerical work	30	6
True supervision	6	1

Obviously far too little time is being given to supervision and too much time is devoted to clerical matters. There is food for thought here for the principal and for the department head.

Disciplinary Problems. Practically all high school principals have some disciplinary problems to handle. The large majority of them turn such problems to their assistants, caring for only those cases which are aggravated or which need the principal's special attention.

NUMBER OF HOURS PER WEEK PRINCIPALS GIVE TO DISCIPLINARY PROBLEMS

	Number of Cases
13-15 hours	1
10-12 hours	5
7-9 hours	4
4-6 hours	21
0-3 hours	39
Total	70
Average	3.4
Standard deviation	3.3

Devoting three and four-tenths hours per week to disciplinary problems gives rise to comment. Most of the principals realize that the amount is too great and recognize the fact that disciplinary problems must and can be reduced.

Outside School Activities. Under this classification may be included attendance at meetings called by superior officers, both on school time and after school time, conferences on educative matters, attendance at service club luncheons, extension lectures, etcetera. Some principals enter into many more activities on the outside than do others. None seem to be free from these time-absorbing activities.

NUMBER OF HOURS PER WEEK PRINCIPALS GIVE TO OUTSIDE SCHOOL ACTIVITIES

	Number of Cases
19-21 hours	1
16-18 hours	1
13-15 hours	4
10-12 hours	3
7-9 hours	11
4-6 hours	13
0-3 hours	39
Total	72
Average	4.5
Standard deviation	4.96

Interviewing Callers. Principals give considerable time each week to interviewing callers. Much of this activity might reasonably be delegated to others. If the callers are patrons of the school very few minutes will usually suffice; if callers are visitors, little of the principal's time may be invested in them; a free teacher or a student will show them about the building and grounds if delegated to that particular task.

That principals devote on the average three hours a week to such tasks is not commendable. It is difficult to see how a principal can profitably invest very much time in interviewing callers.

NUMBER OF HOURS PER WEEK PRINCIPALS GIVE TO INTERVIEWING CALLERS

	Number of Cases
10-12 hours	1
7-9 hours	1
4-6 hours	20
0-3 hours	32
Total	54
Average	3
Standard deviation	3.45

Work Which Might Be Delegated To Others. Matters which should be, but are not, delegated to others are attended to by a surprising number of principals. Whether this is due to lack of assistants, oversight, or lack of appreciation on the part of superintendents and boards of education, or to the fact that some principals are "office principals" is a debatable matter. Competent clerks could be employed to care for these matters with more efficiency and for less cost than that now gained by permitting the principal to perform them.

NUMBER OF HOURS PER WEEK PRINCIPALS GIVE TO MATTERS WHICH MIGHT BE DELEGATED TO OTHERS

	Number of Cases
15-20 hours	1
10-14 hours	1
6-9 hours	13
3-5 hours	19
0-2 hours	42
Total	76
Average	4
Standard deviation	3.99

Summary of Principal's Activities

Activity	*Hours per Week*	*Percentage*
Supervision of instruction	6	17.2
Inspection of grounds and buildings	2.5	7.2
Clerical work	9	26.1
Conferences with assistants	2	5.8
Disciplinary problems	3.4	9.8
Outside school activities	4.5	13
Interviewing callers	3	8.6
Matters which might be delegated to others	4	11.6

This general summary of the activities of the principal shows that 26 per cent of his time is devoted to clerical matters, 17 per cent to supervisory matters, 13 per cent to outside school matters, that 11 per cent of the things he does might reasonably be given to others, thereby saving time and energy to the principal. The problem is not one as to who shall do these things, but rather, shall the principal do them?

Principals feel that among their *regular* duties the following ranking might be assigned. Their remarks do not have to do with what ought to be done, but rather reflect what they individually are doing.

Ranking of Activities of Principals

Important: Inspection of buildings and grounds.
Clerical work.
Attending Civic and Professional affairs.
Adjusting disciplinary problems.
Interviewing Pupils.
Interviewing Callers.
Conferences with Heads of Departments.
Supervision of Instruction.
Supervision of Extra-curricular Activities.
Conferences with Counsellors.
Conferences with Assistants (Vice-Principals).
Conferences with Teachers.
Attending to Matters Which Might Be Delegated to Others.
Teaching Classes.

Chance: Interviewing Callers.
Supervising Extra-curricular Activities.
Teaching Classes.

From an administrative point of view too many principals view supervision of the educative process as "inspection". They consider supervision the function of glancing into a room where a class is in session for a short time now and then to see that everything is all right.

If this interpretation of the relative position of "inspection of buildings and grounds" and of "supervision of instruction" is approximately correct, then a considerable number of principals in the 500 to 1500 enrollment group are still living in the "dark ages". For, according to authorities such as Cubberley, Koos, Rogers, Judd and others supervision is not a cross between the functions of a chief-clerk and a janitor. It is very definitely the assumption of the functions of a director of administrative activities *as applied to teaching.* It includes the direction of the teaching process, the encouragement of better teaching, the evaluation of methods of teaching, and the recognition of the responsibilities that go with the position of teacher.

Principals avoid supervision of the educative process more because of the time which a system of supervision would require than from unwillingness to participate in this phase of their administrative duties. To evaluate the activities of the classroom, to diagnose difficulties, to prescribe remedial measures, to render first aid, to encourage and assist in the teaching process would demand of the principal of the 500 to 1500 enrollment group of high schools more time than is at his disposal, even if he could, by superhuman effort, throw off many other duties which press for his time.

Some principals advocate supervision for the probationary teacher alone. Others delegate the entire supervisory program to their department heads. A few attempt to co-operate with their department heads and give counsel and guidance wherever possible. Still others assign the task of supervision to their vice-principals, entering into the process of supervision only when situations become aggravated.

There apparently is less unanimity on the activity of supervision of instruction than any other activity. It is not surprising, then, to find it ranked seventh, on the average, by the principals in this group of high schools.

Conclusions

Since the social concept of education, promulgated by John Dewey, Kilpatrick and others, has come into general acceptance, the curriculum, the teaching methods and the administration of secondary schools has undergone a great change. The work of the teacher has grown; the viewpoint and technique has been changed. But the principal's job seems to be the only one which has remained unaltered. Supervision from the central office of the school plant has been little affected by educational progress. Concurrent with the growth and development of teaching technique the principal's position has been elevated to one of authority and leadership. More is expected and more is demanded of him now than at any time in educational history.

The principal's job is to get the work done, not necessarily to do it himself. To do this he will have to give less time to inspection and more

time to working with his teachers. He will have to be increasingly a man of education, vision and moral responsibility. He will have to be able to diagnose a situation, analyse and detect weaknesses and strong points and prescribe remedies. Then he will have to see it through. If he fails in any one or more of these functions he will not retain the respect and the loyal following of his teaching staff.

If the definite objectives of education are to be attained, then administrative and supervisory duties must be planned as carefully as any instructional work which may be done in the school. So long as the principalship and the vice-principalship tend to be *incidental* to the educative process the objectives can not be attained in any measure of fullness.

SECONDARY INTER-SCHOOL GAMES WITHOUT ADULT INTERFERENCE

HOWBERT B. BONNETT
Sacramento High School, Sacramento

IT IS a far cry from the days of the Greek athletes, the famous marathon races, and other forms of sport endeavor to the present time, but twentieth century school athletics in this country are harking back to some extent to an ancient principle. In those early days the athlete's success depended not only upon his own prowess but upon his ability to think for himself. In our modern methods of handling athletics the intelligence of the athlete has been submerged by the master mind of the coach, who has become a ringmaster instead of a teacher. But against this sort of thing a reaction has now set in with the introduction of the principle of adult non-interference in inter-school athletics.

The Principle of Non-Interference

The principle of adult non-interference in inter-school contests was first adopted by the New York State Athletic Association on June 2, 1927, as its General Regulation No. 1. This regulation provides that after a contest has started, no coach or other non-player, except the officials in charge of the contest, shall interfere with the contestants. It prohibits side-line coaching and coaching between halves. The coach may attend to physical injuries of the members of his team and he may withdraw a player at any time, but no player withdrawn by a coach or captain may return during the same contest. The captain selects the substitutes for all players taken out during a contest.[1] This principle transforms coaches into teachers and permits a fundamental rule of pedagogy to function in athletics—that we learn by doing, by choosing, and by acting on our initiative.

In order to find the extent of trial, adoption, and success of the adult non-interference principle in Pacific Coast secondary schools, question-

[1]Norton, H. F., and Rogers, F. R., "Returning Interschool Games and Sports to the Original Owners," a pamphlet published by the N. Y. State Public H. S. Athletic Assoc., State Education Building, Albany, N. Y. Page 3.

naires were sent to the large and medium sized junior and senior high schools in Washington, Oregon, and California during the last school year. Answers were received from 40 senior and 25 junior high schools. Briefly, the returns showed that every one of the schools that had tried this principle for one or more years considered it successful. One of the seven senior high schools that had tried the principle considered it unsuccessful, but this school had tried it only during a few games. Similarly, two junior high schools answered that they felt it unsuccessful but they had tried it for one season only. In other words, the results obtained show clearly that where a fair trial is given to adult non-interference in secondary school athletics, it has been found superior to present conditions.

In this group of sixty-five large and medium sized Pacific Coast secondary schools, 21 schools replied that they had given adult non-interference a trial. Six schools did not answer this question. If they had tried the principle, it is reasonably certain that they would have answered. This means that 44 out of 65 schools or practically two-thirds of this group had not tried the principle. It is also interesting to note that several indicated that the principle was new to them.

Ten per cent of the senior and 48 per cent of the junior high schools answered that adult non-interference had been adopted in their schools.

Only those schools that had tried the principle for one season or less considered it unsuccessful. Several answered "undecided" as to its success. It should be noted, however, that the length of trial in this group of schools was three months or less.

Eight of the fourteen junior high schools and four of the seven senior high schools that tried the principle considered it successful.

It is worthy of note that such changes as are proposed in the application of this principle should not be introduced suddenly, or with drastic measures. In both the State of New York and the city of Detroit, Michigan, this principle was put in force by means of rules or regulations. Using different methods the leaders in health and physical education on the Pacific Coast have described the new principle, showing that it is sound in theory and that it is capable of bringing about more desirable results in players than our present system where the main emphasis is put on winning games. Most of the trials of adult non-interference in Pacific Coast schools have been made by coaches in certain leagues that have voluntarily agreed to try the principle.

There have been certain reactions against the plan as it was introduced in the State of New York, and in Detroit, owing largely to the factors mentioned in the preceding paragraph and to the fact that some coaches seem to have no conception of the real aims and educational values of inter-school games. In the State of New York the principle could not be enforced. It is no longer a state requirement but may be used by such local leagues as desire to do so. Detroit's original plan of "Captain Control" included a strict regulation by which coaches were not permitted to remove boys from games. This drastic rule caused opposition to the plan and brought forth two well-merited criticisms, namely, that

there were too few substitutions and that too much responsibility rested on the captains. Unfavorable publicity resulted, and the Detroit Board of Education has modified their non-coaching plan to such an extent that Detroit has really gone back to the old system involving the college type of competition leading to championships and making the educational and recreational values secondary.

Our whole system of preparing boys to compete in inter-school contests and the conditions under which the contests are played is far from satisfactory. A fundamental indictment against present procedure is that the chief objective is the winning of games. It is contended that games are now really contests between coaches, that coaches often send in substitutes for the express purpose of giving the team orders or information and then remove them after a few plays. Football coaches manipulate their players as a chess player does his pawns in a chess game—players with special abilities such as drop-kickers, line-plungers, punters, and forward-passers are sent into games at certain crucial times. In both football and basketball coaches decide on the strategy between halves and generally give specific orders as to how the game is to be played. Some coaches have signal systems with which they coach from the side lines. This is especially noticeable in baseball, some coaches directing every play that is made by their boys. The coach, the relatively few players that are retained on the squad, the alumni, the merchants, the townspeople bend every effort to the end that "Blankville" shall win the game.

Other indictments against present procedure are that little, if any, thought is given by the coach to the sport's educational and recreational values for the players. It is said that we are failing to develop the qualities of leadership, initiative, and independent thinking in our boys to anywhere near the fullest extent. Thinking observers criticise the present practice of coaches directing practically all of their energies into such channels as making and perfecting winning plays in order to win personal glory, and of using comparatively little thought towards building up in their players such qualities as increased bodily vigor, good health habits, good sportsmanship, mental development, and moral training.

It is useless to criticise unless there is something better to offer. We believe that New York's General Regulation No. 1, already referred to, remedies much that is unsatisfactory and affords greater educational possibilities. This plan is correct in principle and will enable boys to learn by doing, by choosing, and by acting on their own initiative. When this principle is adopted and put into practice by coaches who are in favor of it and who will not violate its principle in underhand efforts to win games, we shall find more learning and better teaching in athletics.

John Dewey has said: Control of the game by those who are not playing, inevitably makes winning the main object of play. The regulation that restores control of the games to the students engaged in them marks, in my opinion, the greatest step yet taken in athletics.[2]

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[2]Rogers, Frederick R., *The Amateur Spirit in Scholastic Games and Sports*, p. 20. C. F. Williams & Son, New York, 1929.

REPORT OF THE ANNUAL CONVENTION OF THE DEPARTMENT OF SUPERINTENDENCE

LEWIS W. SMITH
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The following is an abridgment of a report made by Dr. Smith to the members of the Principals and Supervisors Association of Berkeley, of the Washington meeting of the Department of Superintendence, February 20-25.—EDITOR'S NOTE.

THE annual convention of the Department of Superintendence is always a challenge. It provides at least two opportunities for widening the point of view and intensifying the intellectual life. One of these comes from the opportunity for visiting schools or visiting another part of the country. The other is provided by the conclave of the most brilliant thinkers in the field of educati[illegible].

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The convention had been set at this particul[illegible]eek because it was the bicentennial of the birth of Washington, and it was signalized by the participation of the President, who journeyed to Mt. Vernon and laid a wreath upon the tomb and made an address. * * *.

The convention itself was characterized as usual by the participation of national educational organizations of all kinds. The superintendents, in their own programs, gave their attention to the widest variety of educational topics. A deeper note of grave seriousness characterized the discussion more completely than any other convention of educators I have ever attended. These men were deeply concerned for the great enterprises that they lead throughout the country. This concern did not arise out of concern over their own security, because, strange as it may seem, educators are in more secure situations in a period of depression, and in some respects better off, than other sections of the population. There was real concern, however, and fear that education might be injured in some way as the result of the depression so that it could not perform its function. There was very definite conviction that the stability of the American social order is irrevocably bound up with that of education. Deep resentment was voiced against irresponsible leadership of various kinds that are taking advantage of the present troublous times to wreak their will upon the structure of education itself.

I shall not undertake to give an account, number by number, of the speeches that I heard. I should like to summarize some of them.

Professor Boyd H. Bode of Ohio State University, in his address entitled "Education Through Freedom in Learning," calls attention to the fact that the social order can be preserved and guided in a program of conservative progress only by inauguration through the processes of education, and that if education does not undertake this process in a very short time it would disintegrate, and in this connection it is necessary for the schools not only to interpret the social order that now exists, but train youth so that they can readily adapt themselves to changing conditions.

Dean William F. Russel of Teachers College, Columbia University, in his address on Leisure brought out very clearly the changed conditions of our present society, the outstanding features of it being unemployment, but he gave a brilliant account of how society has always had to make some sort of an adjustment to take care of its unemployed for the period of their unemployment. If it is not able to do so, its whole structure is in danger. In this connection he pointed to the gladiatorial conflicts in Rome, to the assignment of farms to Cæsar's legions and to the fact that America after the Civil War was able to give homesteads to the returned soldiers. This imposes upon us, according to him, a problem of preparing for leisure occupa-

tions. He pointed out how these new features in manufacture tend to increase leisure: (1) inventions; (2) increase of mergers; (3) frontiers closed; (4) high speed of modern machines.

L. P. Jacks of Oxford, England, in his address entitled "Education for Leisure" pointed out the danger that comes from vacant minds of unemployed, and that in our country we have not yet developed as we should a technique of leisure habit. We are too much devoted to the search for external excitement. Professor George B. Cutten in his talk on "The Saving Power of Leisure" went on to explain that modern man is too much specialized for his environment, but more particularly did he draw attention to the fact that we have not been able to keep up with the high speed of modern civilization and that this is showing itself in the tremendous increase in insanity and that most of this insanity is functional. He stressed the fact that there are three factors necessary in a leisure education program: (1) that it should involve play; (2) that it should involve the restoration of the body, and (3) that it must give mental satisfaction.

On the program with Professor Bode and Professor Counts, who talked on the subject of Safeguarding the Nation by Education, were Dean Melvin E. Haggerty of the University of Minnesota, Professor Ernest Horn of the State University of Iowa, Alexander Meikeljohn of the Experimental College, University of Wisconsin, and Professor Jesse H. Newlon, Director of Lincoln School of Teachers College, Columbia University. This was an instructive as well as a humorous program.

David E. Weglein, Superintendent of Schools, spoke on "How Shall the Crisis Be Met by School Officials." He pointed out the fallacy of cutting the educational program, particularly teachers' salaries, by stating that teachers' salaries are still less than three-fourths of the standards maintained for people gainfully employed and that the efficiency of the schools could not be maintained if serious cuts were made in salary schedules. He advocated making all internal adjustments necessary and perhaps a temporary financial retreat might be advisable in certain parts of the program. He indicated, too, that perhaps some desirable things might necessarily be postponed, as for example the postponement of a building program, the planning but the abeyance of construction of new buildings; a reorganization of schools to take advantage of every unit of space; purchase of sites; refunding of debts; and the improvement of business administration.

Professor Robert Murray Haig of Columbia University spoke on "Tax Reform in Relation to the Financing of Education." He declared there was perhaps some advantage in the depression due to the fact that most tax reforms occur during depression. He made the statement that public finance is the ugly stepdaughter of economics. He outlined in brief how rapidly the social income of the country had declined in the last few years and showed that the schools, if properly financed on the return of prosperity, would have to rely on certain specialized taxes, such as sales tax, gasoline tax, income tax, death rates, and that a greater part of the burden for the support of schools must be taken off of the local property tax and imposed upon the State government, and in this connection that the states should build up a reserve to take care of irregularities that might come as a result of these specialized taxes. He declared there are plenty of devices for taxation and that all there is for us to do is to have courage in taking advantage of some of them.

Senator Russell Dearmont in his talk on "How One State Has Met the Problem of Financing Education," also stressed the idea that the opportunity for improvement comes in a period of depression. He reiterated the state support of schools and called attention to a thing that was often repeated during the convention, that 94 per cent of the burden was on property tax. The tax must be taken off of this and put upon intangibles in some way. Eighty per cent of the property of the country is in the form of intangibles.

Senator Fess was an interesting interpolation on the program. He appeared to describe the different projects undertaken by the national government to overcome the psychology of fear that now grips the country, to strengthen banks and corporations so that they can go ahead with business. He called attention to the fact that half the gold in the world was stored within a few blocks in the national Treasury

Building. The meeting place was Continental Hall, a part of the Memorial Building erected by the Daughters of the American Republic.

Secretary Wilbur appeared on this same program. He called attention to the fact that we are going to enter into a competition between schools and highways, and that democracy is about to suffer from the excellence of its means of intercommunication. Herd and mob psychology is becoming a danger. We must learn how to manage this mob psychology in the best interests of democracy and this democracy must change in order that it may grow.

President Hutchins appeared on the same program and called attention to the essential unity of the American educational system. He started his address by saying, "I propose to you an educational paradox." The first part of that paradox is that we actually have an educational system in America. We must recognize that it is a system and insist upon its essential content from the kindergarten through the university, whether the school is located in one state or another, or whether it is a private or a public school, state or endowed university. The second part of this paradox is that each unit of this system shall be independent. In the terms of its own educational task it must interpret its work. No section of it must be permitted to ride on the neck of the institution or segment immediately below. This address was so well organized and so logically presented that the body of educators gave prolonged applause and called the youthful president a second time to his feet in recognition of the welcome.

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A Convention of Outstanding Men

One always gets the impression, when attending a meeting of the Department of Superintendence, that here is an outstanding group of hard-headed, practical men. Yet some of the sessions are devoted to idealistic programs. One of the best and one of the most outstanding was that on "Intangibles." Florence Hale, President of the National Education Association, was the first speaker. She came up to her childhood instruction that she should have her head up and speak up. It was a characteristic speech that she delivered, interspersed with well-selected poetry. The program was distinguished by two outstanding leaders of American life, Lorado Taft, sculptor, and John H. Finley, editor of the New York *Times*. Taft did not have enough time. His appeal was for more attention to be given to the beauty that is in the world. He told a story of the vacation life of a group of artists on Winona Lake in Indiana. It was their custom to watch for beautiful sunsets. Sometimes there was no beautiful sunset; at other times they had the rare privilege of enjoying them. One night at a beautiful sunset a little servant girl suddenly asked permission to go to her mother's home, which was nearby, and ask her mother to come and see the sunset. Taft said to her, "Why, you have had sunsets all your life before." "No," she said, "I never saw a sunset until you came and I want my mother to see it." This was Taft's way of showing that beauty can best be taught by having it pointed out and that it may be missed if it is not pointed out. He said that even savages appreciated beautiful things, many of them. He said that the fact that savages did this was his inspiration for putting up the colossal statue of Black Hawk overlooking Rock River. He told the story of how Indians used to come to the banks of that river that they might enjoy the scenery the same as civilized men have done since, and how Black Hawk himself might have been one of those Indians that came to that spot, and that was his inspiration for building the statue, which stands there in the forest by itself away from the usual haunts of civilized man, gazing across the forests and water and bluffs that feature the Rock River Valley.

It is interesting also to see the idealism of the practical editor of a great metropolitan newspaper, John Finley, who spent most of his life as an educator. By the way, both he and Taft were products of the prairies of Illinois. He gave an account of the misconceptions of literature, describing the real meaning of literature as an expression of linguistic beauty and noble emotion. One sentence perhaps will summarize his address, "Literature is the organ of the mind of the race."

Educational News and Comment

FREDERICK WARDE AT 81

For half a century Frederick Warde has given in fullest measure his great histrionic genius to entertaining, instructing and inspiring America through his interpretations of the highest and best forms of literature. In so doing he has elevated American culture and captured the affections of theatre-goers and students of literature throughout our land. On the occasion of his eight-first birthday, February 23, Dr. Warde spoke briefly to his friends over radio from Los Angeles. It was like a benediction to those who had the pleasure of hearing his voice again, strong and masterful as of other years, and we here pass his greetings on to readers of THE QUARTERLY who did not have the pleasure of hearing him over radio:

Cordial Greetings to My Radio Friends:

It was difficult to realize, when I woke up this morning, that I had lived in this great world for more than four score years, but the cup of coffee the bell-boy brought, with the greeting "Many happy returns of the day, Mr. Warde," awakened me to the fact that it was my eighty-first anniversary. A feeling of great joy and gratitude filled my heart that I was in good health, in the enjoyment of all my faculties, and rich in many friendships by which I was surrounded, even to the greeting of the bell-boy. Then memories crowded my mind; memories of loved ones; memories of friends gone before; memories of struggles, vicissitudes, triumphs, failures, joys and sorrows; a kaleidoscope of incidents, co-mingled in the experiences of a long life, in the most progressive period of the history of the world, twenty-three years of which were passed in England and fifty-eight in the United States. In the latter period I had seen this country develop from a practically unimportant western republic into one of the dominating nations of the world. I had crossed this great continent when there was only one line of railway from the Atlantic to the Pacific coast, when the buffalo and the antelope grazed on the prairies, all now transformed into fertile farms. I had seen settlements develop into villages, villages into towns and towns into populous and prosperous cities. I had seen the advent of the electric light, the telephone, wireless telegraphy, the automobile, the submarine, the aeroplane, and that modern miracle, the radio. Science and perfected mechanism have annihilated time and space, linked the old world, and practically created a new one with a new point of view of life.

But the fundamental principles of the old life still remain, that "one touch of nature that makes the whole world kin," love of country and of kind, sympathy with suffering, honor, integrity, admiration of achievement, Order, Law and Justice, aid to the helpless, protection of the weak, faith and trust in God, and while those basic principles remain the world is secure.

It has been a rich and glorious life to me in a beautiful world, a world of "make-believe" if you please to call it so; yet a world where material conditions exist but are beautified by imagination, romance, ideality and poetry; a world in which friendships are made and cherished, and with the wealth of such friendships the maturity of my life is enriched. A very dear friend once told me that happiness of life consisted of three factors: Health, Love and Work. I have enjoyed all three of those conditions, and in them I have found my happiness. So, with a deep and sincere appreciation of the many greetings, souvenirs and good wishes that have been showered on me today, to my personal friends I send my love and gratitude, to those who honor me with their esteem and regard, a sense of deep obligation; to the country, my loyalty and my service; and to God, with humility and reverence, my eternal gratitude for the abundant blessings He has bestowed on me.

EPISODES IN THE LIFE OF GEORGE WASHINGTON*

It was a happy incident when two California school-men—Cloud and Kersey—conceived the plan to recast the life and character of Washington around twenty-seven episodes, personal and historical, about the great Virginian for the boys and girls and their elders in this bicentennial year. But these episodes are not for 1932 alone; they will be read with equal zest in other days and by other generations, for they are the flower of Washington's great life, about which the longer and more tedious histories and biographies have been cast, and they will not change. They will be looked into, examined, re-evaluated, expanded, recast and made over again by every biographer and historian who shall write of Washington in the next thousand years.

The joy of these "EPISODES" is that they are well told, and the satisfaction is that they embody about all (and a little more) than the average American of even the well-schooled class can, or does, carry about with him concerning the life of the Father of our country.

*Cloud, A. J., and Kersey, Vierling, *Episodes in the Life of George Washington*, 226 pp. Charles Scribner's Sons, New York. $0.84.

NORTH SAN JOAQUIN SECONDARY SCHOOL COUNCIL

Integration of high school and junior college so that each institution will better perform its duties was the object of a conference held at the Modesto Junior College on January 15 between thirteen high school principals and representatives of the Modesto Junior College, the State Department of Education, Stanford University, and the University of California.

As the result of a suggestion made by Dr. Jesse B. Sears of Stanford University, the principal speaker at the conclave, the group undertook the organization of a regional council on secondary education to consider the problem of integration. A committee of seven members was named, to report at a meeting on March 5.

In presenting the problem of integration to the group Dr. Sears stressed the importance of preventing duplication of high school courses in junior college. That the council will be a means for the continuous study of problems in which junior colleges and high schools jointly are interested was the belief of Dr. Sears.

Dr. Ricciardi, in presenting the State Department's view on such a council, said that he was glad to see that such a proposed organization would be free of State and county prescriptions, but largely would be operative through local initiative.

Besides the high school principals and members of the Modesto Junior College faculty, the following educators participated in the conference: Dr. Ricciardi, Dr. Sears, Professor R. E. Davis of the University of California, J. H. Bradley, Modesto superintendent of schools; A. G. Elmore, Stanislaus County's superintendent of schools; W. C. Shackleford of the Modesto Board of Education, and Ira W. Kibby of the State Department of Education.

A second meeting was held in Modesto March 5, at which the North San Joaquin Secondary Schools Council was organized by the Modesto Junior College and surrounding high schools.

Dr. Dwight C. Baker, dean of the Modesto Junior College, was chosen president. Other officials are: O. E. Brown, Ripon, secretary-treasurer; Leroy Nichols, Turlock; J. O. McLaughlin, Stockton; and A. P. Patten, Modesto, members-at-large.

Speakers at this meeting again were Dr. Jesse B. Sears of the Stanford University School of Education and Dr. Nicholas Ricciardi, chief of California secondary education.

"Our education system today does not consist of several isolated institutions," Dr. Sears said in addressing the group. "There should be an integration and unity throughout our secondary system. This newly formed council is based on unification and service."

Reported by

LEONARD I. BARTLETT,
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SCHOOL ENROLLMENT IN LOS ANGELES

The Los Angeles schools enrolled 295,841 pupils January 22, 1932, an increase of 8033 over the enrollment on the same day a year ago. The secondary school

enrollment was 100,619, an increase of 4585. The Los Angeles Junior College had an enrollment of 3095, which is an increase of 718 over that of a year ago.

SECONDARY EDUCATION IN THE UNITED STATES*

Dr. William A. Smith of the University of California at Los Angeles has performed a service to secondary education through the authorship of the latest and one of the best books in the field of secondary education. Dean Kemp, in his "Introduction," makes the following comment:

> "The author of the present volume presents a comprehensive and careful survey of the whole field of secondary education. . . . In his selection of content the author has made another significant departure from the conventional textbook in this field, namely, in the attempt to show how the evolution of the democratic secondary school corresponded to changes in our economic, social, and political life . . . The chapters on the curriculum and curriculum-making are among the best sources to be found which attempt to assemble, select, and analyze the great mass of current research on the curriculums of the three levels of secondary education."

Sir John Adams has paid high tribute to the book in the following statements:

> "Dr. Smith has in truth made a notable contribution to our subject, covering the whole ground of education in all its branches, historical, technical, administrative, and philosophical. . . . The book is indeed 'not one but all the world's epitome,' and supplies a complete course in education. Naturally *Secondary Education* invites a discussion of education in all its branches if we are going to understand it a-right. And Dr. Smith has certainly accepted the invitation. Naturally all the readers will have different preferences. . . . Where I scored greatly was in Dr. Smith's treatment of the curriculum in all its branches. His wide sympathy makes him give fair play to all the different contestants, and the student who is really anxious to get at the true attitude gets every chance at Dr. Smith's hands. . . . Naturally, Dr. Smith comes into his own in his last chapter. No reader could make much out of this chapter unless he knew the whole subject exceedingly well, or had read all the rest of the book. For there the author has made just the necessary preparation. His 'Background' chapters at the beginning put the readers into just the right position to understand what follows, and I shall use them in my History of Education lectures to illustrate how valuable an historical background is in mastering the theory of education."

The author's discussion centers around seven main aspects of the American secondary school situation:

1. The rise, expansion, and reorganization of the democratic American secondary school system;
2. A comparative study of secondary education in other countries;
3. The scope and objectives of secondary education, and the functions of secondary schools;
4. The characteristics and needs of the American secondary school population;
5. The curriculum;
6. The extra-curriculum; and
7. Changing conceptions and practices of teaching in secondary schools.

The historical discussion is significant because it approaches the subject through the interpretative rather than the purely descriptive. The same comment applies to Dr. Smith's treatment of secondary education in other countries. An unusually fine chapter presents the scope and objectives of secondary education and the functions of secondary schools and the author covers the whole field from the junior high school through the junior college. In his treatment of the secondary school population the author centers his interest in an effort to uncover the real possibilities of secondary school pupils. The chapters on curriculum-making are very helpful, both to students of secondary education and teachers in the service. The book is commended for its value not only as a textbook but as an aid in guidance of teachers.—MERTON E. HILL, University of California.

*Smith, William A., *Secondary Schools in the United States*, The Macmillan Company, 417 pp. $2.50.

THE SCHOOLS AND UNEMPLOYMENT

Educators boast of the holding power of the schools, and point with pride to over a half million pupils of ages 16 and 17 who are restrained by the schools from entering into competition with their elders for jobs at a time when there are not jobs enough to go around.

"If the 1930 ratio per cent of school attendance to population for persons 16 and 17 years of age had remained the same as for 1920, more than 671,000 young people now attending school would be out of school and would be potential competitors with the adult group for employment," states Dr. Maris M. Proffitt, consultant and specialist in guidance and industrial education, Federal Office of Education. He continues: "The holding powers of the schools over this potential wage-earning group increased from 42.9 per cent in 1920 to 57.3 per cent in 1930," Dr. Proffitt says, basing his conclusions on 1930 Census reports of population and school attendance. "In 1920 the percentage of urban population attending school was 39.2. In 1930 there were 60.5 per cent of urban residents (16 and 17 years of age) in school. The percentage of the rural population attending school in 1920 was 46.1, and in 1930 it was 53.9."

Increases in school attendance are not always the direct result of population increases, statistics show. Dr. Proffitt explains that in some of the states there was an absolute decrease in the rural population of this age group, but the school attendance increased, nevertheless. "Illinois, for example, had a rural population of 16 and 17 year old boys and girls in 1920 of 80,459, which had decreased in 1930 to 77,874, yet the rural school attendance of this age group increased from 34,911 in 1920 to 42,211 in 1930. In Minnesota the rural population of this age numbered 55,582 in 1920 and only 54,806 in 1930, but rural school attendance climbed from 21,654 in 1920 to 26,482 in 1930."

California leads all other states in the percentage of increase with 27.4 per cent more boys and girls 16 and 17 years of age attending school in 1930 than in 1920.

"Among the factors contributing to increased school attendance during the past ten years of the 16 and 17 year old population group, with the consequent result of eliminating them as potential competitors with adults for employment," Dr. Proffitt says, "are the increase in the amount and character of vocational training offered in the public schools; the increased age for compulsory school attendance and better enforcement of attendance laws; increase in age at which youth is accepted into employment mainly because of increased need for technically trained and skilled workers; the increasing use of power machinery which tends to eliminate unskilled labor; and the growing recognition by students, parents, and employers of the practical value of the educational training offered in the upper years of the public school curriculum."

While the educator boasts of increased school attendance the taxpayer everywhere is complaining about mounting taxes. Can increased school attendance, in excess of the increase of wealth as represented by taxable property, be cared for without increased income and, therefore, increased taxation? If it can, then there has been some waste in school administration in other years and some sound economies can be effected; if this increased attendance cannot be cared for without larger income, the people must choose between increased taxation, under old forms or new, and the responsibility of turning hundreds of thousands of young men and women from the schools into competition for jobs when jobs are not to be had, with the result of further increasing vagrancy and crime.

If increased taxation is needed, where are the taxes to come from? The homes and real estate of every community are now taxed to the point of penalizing home ownership. If more money is needed for the schools, school administrators and legislators must find that money where wealth really exists and not by levying higher taxes on the mortgaged homes of the people—THE EDITOR.